CUMULATIVE AUTHOR INDEX
Environmental Entomology
Volume 32, 2003

A

Abraham, B. J., 830
Adams, B. J., 187
Ahrens, M., 1329
Aikawa, T., 96
Albrecht, U., 1242
Al-Deeb, M. A., 859, 1164
Allison, J. D., 23
Aluja, M., 1377
Alyokhin, A., 1393
Andow, D. A., 334
Anstead, J. A., 662
Antony, B., 584
Arbogast, R. T., 264
Armbrecht, I., 542
Arthurs, S., 853
Ashikaga, T., 523
Atanassov, A., 780
Avondet, J. L., 347
Ayres, M. P., 668

B

Bacchi, M., 1313
Baker, G., 71
Barbosa, P., 1219
Barbour, J. D., 564
Barlow, N. D., 771
Barrion, A. T., 929
Baskauf, S. J., 915
Beanland, L., 641
Beckman, N., 881
Becnel, J. J., 1146
Bellini, R., 1313
Bennett, R. G., 208
Berberet, R. C., 425, 1123
Berg, D. J., 347
Bergeron, J.-M., 123
Bernal, J. S., 866, 886
Bianchi, F. J. J. A., 1290
Bisges, A. D., 1123
Black, C. A., 1196
Blackshaw, R. E., 535
Blair, J. M., 859
Blair, R. B., 347
Bledsoe, L. W., 992
Boissot, N., 608
Bonnet, E., 680
Boohene, C. K., 1146
Borden, J. H., 23, 742, 963
Borgemeister, C., 51
Borowicz, V. A., 1242
Bosch, J., 711
Bostanian, N. J., 256
Botchey, M., 247
Botero-Garcés, N., 1187
Braman, S. K., 907
Brock, C., 807
Broderick, N. A., 387
Brower, L. P., 1019
Brown, M. W., 830
Buddle, C. M., 88
Budia, F., 196
Burd, J. D., 662
Burnett, P. A., 535
Butler, L., 1364
Butts, R. A., 535
Bystrak, P., 237

C

Campbell, A., 1045
Canhilal, R., 1105
Cao, W.-H., 17
Cardoza, Y. J., 220, 970
Cardwell, K., 51
Carrieri, M., 1313
Cartron, J.-L. E., 1075
Castro, M. B., 1010
Center, T. D., 397
Cervera, A., 705
Chaney, W. E., 1196
Charlton, R. E., 17
Chastain, B. B., 736
Chatzoglou, C. S., 1337
Chi, H., 327
Cibrian-Tovar, J., 484
Clancy, K. M., 626
Cloyd, R. A., 463
Coderre, D., 256, 939
Cognato, A. I., 1262
Cole, T. J., 618
Colfer, R. G., 840
Cook, S. P., 1354
Cooke, B. J., 299
Cornelius, M. L., 1002
Costello, M. J., 1085
Cowles, R. S., 895
Coyle, D. R., 452
Crawford, C. S., 1075
Crowder, D. W., 992
Cruz-López, L., 1386

D

Daane, K. M., 1085
Dahlsten, D. L., 1115
Dahm, C. N., 1075
Danka, R. G., 1305
David, M., 535
Dawson, R. D., 1045
Deguine, J.-P., 1203
de la Cruz, R., 816
Delisle, J., 470
Delvare, G., 608
Díaz-Fleischer, F., 1377
Di Fonzo, C. D., 992
Domingo, I. T., 929
Duncan, R. R., 907
Dunkel, F. V., 1283

E

Ebbert, M. A., 347
Edwards, C. R., 992
Eger, J. E., 1035
Ehler, L. E., 789
Eisen, L., 1010
Eisen, R. J., 1010
Eisley, J. B., 407, 992
Ekmekci, U., 1105
Eliopoulos, P. A., 1049
Elliott, N. C., 425
El-Sayed, A. M., 470
Engelke, M. C., 907
Erbilgin, N., 1115
Ergin, E., 441
Erlandson, M., 529
Eyster, R. S., 133

F

Fabris, S., 477
Failla, G., 689
Fantinou, A. A., 1337
Fay, P. A., 1099
Ferguson, G., 1154
Ferguson, J. W. H., 797
Ferreira De Almeida, M. A., 1139
Fink, L. S., 1019
Fisher, J. R., 1251
Fisher, M. L., 1262
Floate, K. D., 535
Foord, S. H., 797
Funderburk, J. E., 1035
Fuxa, J. R., 187
Fuzy, E. M., 392, 895

G

Gamby, K. T., 1283
Garcerá, M. D., 705
Garcia, P., 180
Gardiner, M. M., 564
Gardner, W. A., 187
Garrison-Johnston, M. T., 1354
Ge, F., 270
Geden, C. J., 1139, 1146
Giles, K. L., 425
Gillott, C., 529
Gloaguen, V., 680
Godfrey, L. D., 840, 1196

Goldson, S. L., 771
Goodman, R. M., 387
Gore, J., 103
Gouli, S., 523
Goulson, D., 61
Gozé, E., 1203
Granett, J., 1196
Grant, J. A., 80, 983
Grantham, R. A., 447
Gray, M. E., 992
Greenberg, S. M., 39, 698
Guo, Y., 312
Gut, L. J., 470

H

Haile, F. J., 433
Halbert, S. E., 499
Hall, M. J., 187
Hall, R. B., 452
Hamilton, G. C., 602, 780
Handelsman, J., 387
Hanna, W. W., 907
Hansen, E. A., 1035
Harbo, J. R., 1305
Harlin, A. D., 1262
Harmon, J. P., 334
Harris, J. W., 1305
Hart, E. R., 452
Haynes, K. F., 736
Heagle, A. S., 421
Hein, K. E., 23
Heinz, K. M., 853
Held, D. W., 873
Henneberry, T. J., 584
Hennon, P. E., 1234
Higley, L. G., 433
Hirose, Y., 789, 789
Hoffmann, A. A., 290
Hoffmann, M. P., 756, 765
Hofstetter, R. W., 668
Holter, P., 717
Hooper-Bùi, L. M., 204
Hoover, K., 1028
Horak, M. J., 17
Hough-Goldstein, J. A., 229, 366
Hoy, C. W., 1177
Hsu, C. L., 840
Huang, J., 9, 220
Huber, D. P. W., 742
Huc, J.-A., 608
Hughes, M. G., 602
Humber, R. A., 187
Hunt, D. W. A., 1154
Hurd, L. E., 881
Hwang, S.-Y., 752

I

Isaacs, R., 1187
Isard, S. A., 992

J

James, D. G., 977
Jasinski, J. R., 407
Jenkins, D. A., 1283
Jo, Y.-K., 1370
Johnson, J. B., 564
Jones, D. B., 425
Jones, F., 807
Jones, G. D., 144
Jones, R. H., 103
Judd, G. J. R., 470

K

Karban, R., 1196
Katsoyannos, B. I., 319
Keller, L., 1329
Keller, M., 71
Kellogg, S. K., 1019
Kemp, W. P., 711
Kirby, K. R., 1066
Klepzig, K. D., 668
Koch, G. W., 626
Kok, L. T., 1322
Kolb, T. E., 510, 652
Kondo, V., 1364
Koppenhöfer, A. M., 392, 895
Korie, S., 51
Kosaka, H., 96
Kovach, J., 407

L

Labrie, G., 123
Laidlaw, W. G., 477
Lait, C. G., 220
Lamb, R. J., 414
Lane, R. S., 1010
Lashomb, J. H., 602
Lauzon, C. R., 953
Lawson, A. B., 1115
Legrand, A., 1219
Legrand, S., 470
Lemos, W. P., 592
Leonard, B. R., 103
Levine, E., 992
Levings, C. D., 1343
Lindgren, B. S., 208
Liu, C.-S., 752
Liu, X., 270
Lombardero, M. J., 668
López, M., 1377
Lopez-Collado, J., 484
Lucas, E., 256
Luck, R. F., 377
Lury, N. D., 470

M

Macías-Ordóñez, R., 1377
Maini, S., 1313
Makino, S., 175
Malcolm, J. R., 1066
Martínez-Pardo, R., 705
Matadha, D., 602
Matlock, R. B., Jr., 816
Mattson, W. J., 1
Mayer, R. T., 1242
Maymó, A. C., 705
McAuslane, H., 1035
McAuslane, H. J., 9
McDonald, S. A., 499
McHugh, C. W., 510
McMillin, J. D., 452
McNeil, J. R., 1028
McNeill, M. R., 771
McQuate, G. T., 144
Meade, T., 237
Medina, P., 196
Men, X., 270
Mescher, M., 1329
Milks, M. L., 286
Miller, S. A., 1177
Miller, S. P., 359
Mo, J., 71
Mochiah, M. B., 247
Molles, M. C., Jr., 1075
Moore, J. A., 1354
Morales-Ramos, J. A., 1234
Morandin, L. A., 555
Morewood, W. D., 23, 1028
Morrison, L. W., 548
Morse, J. G., 377
Mullinix, B. G., Jr., 1399
Musser, F. R., 575, 1131
Myers, J. H., 286

N

Nagarkatti, S., 340
Nakamura, S., 614
Nault, B. A., 499
Nault, L. R., 1177
Ndemah, R., 51
Neal, J. J., 463
Nechols, J. R., 17
Neiner, P. R., 1028
Nestel, D., 319
Ngi-Song, A. J., 247
Nguyen, K. B., 187
Nibouche, S., 1203
Niehoff, G. J., 1354
Norrbom, A. L., 1377
Nuessly, G. S., 9

O

Oi, D. H., 1171
Oliveira, L., 180
O'Neal, M. E., 992
Onstad, D. W., 992
Osbrink, W. L. A., 1002
Overholt, W. A., 247

P

Palaniswami, M. S., 584
Palermo, B. L., 626
Papadopoulos, N. T., 319
Parker, B. L., 523

Pavis, C., 608
Payton, M. E., 425, 1123
Perdikis, D. C., 1337
Perfecto, I., 163
Pesek, J. D., 366
Petersen, S. D., 1045
Peterson, R. K. D., 237
Petit, D., 680
Phelan, P. L., 641
Picaud, F., 680
Pires Do Prado, A., 1139
Poehling, H.-M., 51
Ponce De León, R., 689
Porter, S. D., 548
Potter, D. A., 618, 873
Potter, S. E., 953
Pranschke, A. M., 204
Pratt, P. D., 397
Prenzel, B. G., 477
Price, D. L., 229
Prince, C., 123
Proffitt, J. R., 771
Prokopy, R. J., 953
Provost, C., 256
Pureswaran, D. S., 963

R

Rabbinge, R., 151
Raffa, K. F., 387, 1115
Ramachandran, S., 1035
Ramalho, F. S., 592
Ramaswamy, S. B., 618
Rastall, K., 1364
Ratcliffe, S. T., 992
Rayamajhi, M. B., 397
Reid, M. L., 477
Reis, J., 180
Reissig, W. H., 470
Reitz, S. R., 1035
Rhainds, M., 1056
Rhoades, C. C., 359
Rieske, L. K., 359
Rocchini, L. A., 208
Roelofs, W. L., 470
Rogers, M. E., 618
Rojas, J. C., 484, 1386
Rojas, M. G., 1234
Roland, J., 214, 299
Romanuk, T. N., 1343
Rosenheim, J. A., 840
Ross, K. G., 1329
Roush, R., 71
Rowney, D. L., 1115
Royer, T. A., 425
Rull, J., 1377
Rundle, B. J., 290
Rypstra, A. L., 88

S

Sadof, C. S., 463
Salminen, S., 641
Salom, S. M., 1322
Sappington, T. W., 698
Sasaki, M., 614
Saunders, M. C., 340
Schanderl, H., 939
Schleider, P. G., 133
Schmelz, E. A., 220
Schmidt, B. C., 214
Schmitt, J. J., 830
Schoenly, K. G., 929
Schuetz, J. F., 1075
Schulthess, F., 51
Schweizer, H., 377
Sellmer, J. C., 1028
Sétamou, M., 698, 886
Sewell, G., 1393
Shae, Y.-S., 752
Shapiro-Ilan, D. I., 187
Shearer, P. W., 780
Sheill, L., 1329
Shelton, A. M., 575, 756, 765, 1131
Shen, T.-C., 752
Shipp, J. L., 1154
Shipp, L., 1056
Shoemaker, D. D., 1329
Showler, A. T., 39
Shufran, K. A., 662
Shukle, R. H., 488
Shutler, D., 1045
Silva, L., 1211
Sivinski, J., 1377
Six, D. L., 1115
Skinner, M., 523
Skov, K. R., 652
Skovgård, H., 717
Slone, D. H., 397
Smagghe, G., 196
Smith, M. A. H., 414
Smith, M. T., 229
Smith, S. M., 1066
Smith, W. A., 447
Smitley, D. R., 1370
Smyth, R. R., 756, 765
Snodgrass, G. L., 945
Soares, A. O., 939
Spencer, J. L., 992
Spohn, B. G., 736
Spurgeon, D. W., 31, 133, 698
Sridhar, P., 414
Stanley, D., 484
Stathas, G. J., 1049
Stenseng, L., 717
Stout, M. J., 1227
Strazanac, J. S., 1364
Sylva, C. D., 144

T

Tafoya, F., 484
Takano, S.-I., 614
Takasu, K., 614
Tan, C.-W., 752
Tatsuta, H., 175
Tavares, J., 1211
Teal, P. E. A., 970
Tillman, P. G., 1399
Tindall, K. V., 1227
Tirry, L., 196
Tobin, P. C., 340
Todd, T. C., 859
Togashi, K., 96
Tolin, S. A., 499
Tomov, B. W., 866
Trier, T. M., 1
Trimble, R. M., 470
Tumlinson, J. H., 220, 970

U

Uçkan, F., 441
Ulloa-Chacón, P., 542
Ulmer, B., 529
Umble, J. R., 1251
Unelius, C. R., 470

V

Van, T. K., 397
Vance, C. C., 1066
van der Werf, W., 151, 1290
Van Jaarsveld, A. S., 797
Vargo, E. L., 1271
Vet, L. E. M., 163
Veysey, J. S., 668
Vieira, V., 1211
Villa, J. D., 1305
Villani, M. G., 80, 983
Vinson, S. B., 866
Viñuela, E., 196
Virgen, A., 1386
Vogt, J. T., 447
Volonterio, O., 689

W

Wagner, M. R., 652
Wakarchuk, D., 214
Wallin, K. F., 652
Walsh, G. C., 276
Weseloh, R. M., 111
Westbrook, J. K., 133
Wharton, R. A., 1377
White, J. A., 334
Wieser, H., 477
Wilde, G. E., 859, 1164
Williams, D. F., 1171
Williams, J. L., 633
Willson, H., 407
Wilson, I. M., 23
Wilson, J. L., 510
Winston, M. L., 555
Wise, D. H., 633
Wise, I. L., 414
Witmer, J. E., 366
Wolt, J. D., 237
Wood, B. W., 187
Wright, R. E., 447
Wu, K., 312
Wu, L., 488

X
Xia, J. Y., 151
Y
Yagi, S., 614
Yan, Z., 807
Yang, T.-C., 327
Yardim, E. N., 270
Yee, W. L., 726
Yigit, A., 1105
Young, C. E., 407
Z
Zanuncio, J. C., 592
Zarrabi, A. A., 1123
Zhang, Y., 1154
Zhong, H., 807
Zhou, L., 1177
Zhu, J., 736
Zilahi-Balogh, G. M. G., 1322

CUMULATIVE SUBJECT INDEX
Environmental Entomology
Volume 32, 2003

A

Acalymma spp.,
  Diabrotica speciosa, 276
  Diabrotica viridula, 276
  host range, 276
  host shifts, 276
Acyrthosiphon pisum,
  foraging, 1219
  leaf morphology, 1219
  Pisum sativum, 1219
  tritrophic interactions, 1219
Adelges tsugae,
  hemlock woolly adelgid, 523
  insect coldhardiness, 523
  Tsuga canadensis, 523
  Tsuga caroliniana, 523
Aedes albopictus,
  Culex pipiens, 1313
  ecological niche, 1313
  exotic species, 1313
  larval competition, 1313
Aesculus parviflora,
  Delphinium elatum, 873
  Pelargonium, 873
  Popillia japonica, 873
aggregation pheromone,
  cactus weevil, 484
  Curculionidae, 484
  Metamasius spinolae, 484
  Opuntia ficus, 484
aggression,
  agonistic behavior, 1002
  Coptotermes formosanus, 1002
  kin recognition, 1002
  Rhinotermitidae, 1002
agonistic behavior,
  aggression, 1002
  Coptotermes formosanus, 1002
  kin recognition, 1002
  Rhinotermitidae, 1002
agrobiodiversity,
  optimal sampling, 929
  quadrat size, 929
  tropical rice, 929
  Wiegert's method, 929
agroecosystem, 366, 535
  biological control, 535
  Canada, 535
  Carabidae, 366
  diversity, 535
  generalist predators, 366
  habitat fragmentation, 366
  intercropping, 535
  plot size, 366
  polyculture, 535
  spiders, 366
Akaike information criteria,
  Scutigerella immaculata, 1251
  soil ecology, 1251
  spatial autocorrelation, 1251
  symphyla, 1251
alfalfa weevil,
  Bathyplectes curculionis, 1123
  defense against parasitism, 1123
  encapsulation, 1123
  Hypera postica, 1123
algal wrack,
  estuarine, 1343
  insects, 1343
  riparian vegetation, 1343
  supralittoral, 1343
alkaloids,
  Chorthippus, 680
  decision making, 680
  diet shift, 680
  graminivory, 680
  patchy habitats, 680
allelochemicals,
  apple maggot, 953
  feeding behavior, 953
  Malus species, 953
  mutualism, 953
alternating temperatures,
  constant temperature, 1337
  developmental rate, 1337
  Sesamia nonagrioides, 1337
alternative food,
  Coleomegilla maculata, 1131
  Harmonia axyridis, 1131
  Orius insidiosus, 1131
  predator, 1131
Anacassis,
  Asteraceae, 689
  Baccharidastrum, 689
  Chrysomelidae, 689
  oviposition, 689
  Uruguay, 689
Anagrus,
  cover crops, 1085
  grapes, 1085
  vineyard, 1085
Anastrepha,
  conservation, 1377
  host–plant relationships, 1377
  parasitoids, 1377
  Tephritidae, 1377
Angoumois grain moth,
  parasitoids, 488
  population dynamics, 488
  protease inhibitors, 488
  Sitotroga cerealella, 488
animal orientation,
  humidity response, 264
  Oryzaephilus surinamensis, 264
  sawtoothed grain beetle, 264
  stored-product insects, 264
Anoplophora glabripennis,
  Cerambycidae, 1028
  host suitability, 1028
  invasive species, 1028
  oviposition preference, 1028
Anthocoridae,
  biological control, 1035
  pepper, 1035
  Thripidae, 1035
  within plant distribution, 1035
Anthonomus grandis, 31, 39
  boll weevil, 31, 39
  component ratio, 31
  cotton, 39
  natural enemies, 39
  pheromone, 31
  vegetative diversity, 39
  volatile collection, 31
  weeds, 39
antibiosis,
  herbivory, 414
  plant defense, 414
  preference, 414
  resistance, 414
ants,
  bioindicator, 542
  Colombia, 542
  forest fragments, 542
  tropical dry forest, 542
  Wasmannia auropunctata, 542
Apanteles galleriae,
  biological control, 441
  food source, 441
  longevity, 441
  temperature, 441
aphid,
  biological control, 1290
  lady beetle, 1290
  landscape ecology, 1290
  modeling, 1290
aphid honeydew,
  bird feces, 726
  cherry, 726
  fecundity, 726
  Rhagoletis indifferens, 726

Aphidius colemani,
biological control, 425
functional response, 425
Lysiphlebus testaceipes, 425
Schizaphis graminum, 425
aphids, 499, 1393
movement, 1393
potato, 1393
Potyvirus, 499
seasonal abundance, 499
tobacco etch virus, 499
virus transmission, 1393
Aphis gossypii, 312, 1399
Bt cotton, 312
cotton, 1399
Geocoris punctipes, 1399
Helicoverpa zea, 1399
plant feeding behavior, 1399
population dynamics, 312
resurgence, 312
Aphis gossypii Glover,
Coccinella septempunctata L., 151
functional response, 151
leaf area, 151
simulation model, 151
temperature, 151
Aphytis proclia,
Chilocorus kuwanae, 602
Cybocephalus sp.nr. *nipponicus*, 602
distribution, 602
Encarsia citrina, 602
Unaspis euonymi, 602
apple maggot,
allelochemicals, 953
feeding behavior, 953
Malus species, 953
mutualism, 953
Araneae,
biological control, 830
insecticide effects, 830
Oxyopes salticus, 830
Salticidae, 830
arthropod diversity, 548, 564
biological control, 564
Humulus lupulus, 564
invasive species, 548
partial correlation, 548
Solenopsis invicta, 548
Tetranychus urticae, 564
artificial diet,
Diabrotica balteata, 9
inducible defense, 9
Lactuca sativa, 9
latex, 9
plant resistance, 9
aster yellows,
dispersal model, 1177
flight behavior, 1177
mark-release-recapture, 1177
Asteraceae,
Anacassis, 689
Baccharidastrum, 689
Chrysomelidae, 689
oviposition, 689
Uruguay, 689
Ataenius spretulus,
Carabidae, 1370
predation, 1370
Staphylinidae, 1370
attraction,
conservation biological control, 977
herbivore-induced plant volatiles, 977
natural enemies, 977
synomone, 977
augmentation,
biological control, 1115
natural enemy conservation, 1115
pheromones, 1115
augmentative biological control, 377, 840
Galendromus occidentalis, 840
generalist predator, 840
Gossypium hirsutum, 840
insectary rearing, 377
intraguild predation, 840
Metaphycus flavus, 377
Metaphycus luteolus, 377
parasitoid, 377
taxonomy, 377
azadirachtin A,
heat degradation, 1283
high-performance liquid chromatography, 1283
postharvest, 1283
Vigna unguiculata, 1283

B

B. impatiens,
Bombus occidentalis, 555
bumble bees, 555
genetically modified, 555
insecticides, 555
nontarget insects, 555
Baccharidastrum,
Anacassis, 689
Asteraceae, 689
Chrysomelidae, 689
oviposition, 689
Uruguay, 689
Bacillus thuringiensis, 237, 387, 407
Chrysopa, 407
corn, 237
Cry1A(b) protein, 237
Danaus plexippus, 237
ecological risk assessment, 237
gypsy moth, 387
host plant effects, 387
Lymantria dispar, 387
mites, 407
Orius, 407
pollen, 237
rove beetle, 407
synergism, 387
zwittermicin A, 387
Bacillus thuringiensis variety *kurstaki*,
nontarget Lepidoptera, 1364
Bactrocera cucurbitae,
Bactrocera dorsalis, 141
cucurbits, 141
natural food sources, 141
pollen, 141
Zea mays, 141
Bactrocera dorsalis,
Bactrocera cucurbitae, 141
cucurbits, 141
natural food sources, 141
pollen, 141
Zea mays, 141
bait,
foraging rates, 447
Solenopsis invicta, 447
temperature, 447
banana,
formicidae, 816
indicator species, 816
pesticide, 816
bark beetle, 477, 652, 963
Douglas fir, 477
host selection, 963
landing, 963
orientation, 963
pest control, 477
pheromones, 477
photosynthesis, 652
ponderosa pine, 652
prescribed burn, 652
semiochemicals, 963
tree water relations, 652
Bathyplectes curculionis,
alfalfa weevil, 1123
defense against parasitism, 1123
encapsulation, 1123
Hypera postica, 1123
Beauveria bassiana, 187, 1154
beneficial insects, 1154
Curculio caryae, 187
greenhouse, 1154
Heterorhabditis, 187
humidity, 1154
insect mite pests, 1154
Metarhizium anisopliae, 187
pecan, 187
Steinernema, 187
beet armyworm,
larval development, 220
plant biochemistry, 220
plant-insect interaction, 220

Spodoptera exigua, 220
white mold, 220
beetles,
Drakensberg, 797
endemism, 797
niche, 797
vegetation types, 797
Bemisia tabaci,
Encarsia transvena, 584
host suitability, 584
hyperparasitoid, 584
parasitoid, 584
superparasitism, 584
Bemisia tabaci B-biotype,
diversity, 608
Encarsia, 608
parasitoids, 608
beneficial insects,
Beauveria bassiana, 1154
greenhouse, 1154
humidity, 1154
insect mite pests, 1154
bertha armyworm,
conspecific eggs, 529
Mamestra configurata, 529
oviposition, 529
biocontrol,
house fly, 1139
Musca domestica, 1139
Nosema, 1139
Tachinaephagus zealandicus, 1139
biodiversity,
Bt-cotton, 270
Shannon-Weaver diversity index, 270
species richness, 270
transgenic, 270
bioindicator,
ants, 542
Colombia, 542
forest fragments, 542
tropical dry forest, 542
Wasmannia auropunctata, 542
biological control, 17, 80, 229, 425, 441, 535, 564, 614, 633, 717, 830, 907, 983, 1035, 1105, 1115, 1171, 1290, 1322
(Z)-11-hexadecenal, 17
(Z)-9-tetradecenal, 17
agroecosystems, 535
Anthocoridae, 1035
Apanteles galleriae, 441
aphid, 1290
Aphidius colemani, 425
Araneae, 830
arthropod diversity, 564
augmentation, 1115
Canada, 535
citrus whitefly, 1105
Coccus hesperidum, 1105
cucurbit, 633
Derodontidae, 1322
development time, 717
Dialeurodes citri, 1105
disease, 1171
diversity, 535
entomopathogenic nematodes, 80
Entomopathogenic nematodes, 983
escape behavior, 633
fecundity, 717
field bindweed, 17
fire ant, 1171
food source, 441
functional response, 425
Geocoris spp., 907
Heterorhabditis bacteriophora, 80, 983
Homorosoma chinensis, 229
host plant resistance, 907
host recognition, 614
host specificity, 229
Humulus lupulus, 564
insecticide effects, 830
intercropping, 535
intrinsic rate of natural increase, 717
Ixodiphagus hookeri, 614
kairomone, 614
lady beetle, 1290
landscape ecology, 1290
Laricobius nigrinus, 1322
longevity, 441
Lysiphlebus testaceipes, 425
mile-a-minute weed, 229
modeling, 1290
natural enemy conservation, 1115
Oxyopes salticus, 830
parasitoid, 614
pathogen, 1171
pepper, 1035
pheromones, 1115
polyculture, 535
Polygonum perfoliatum, 229
predation, 633
predator stimuli, 633
predators, 907
rehydration, 80
Salticidae, 830
Schizaphis graminum, 425
Serangium parcesetosum, 1105
sex pheromone, 17
soil moisture, 80, 983
Solenopsis invicta, 1171
Steinernema glaseri, 983
Steinernema spp., 80
temperature, 441
temperature-dependent development, 1322
Tetranychus urticae, 564
Thripidae, 1035
tick, 614
Timandra griseata, 229
turfgrass, 907
Urolepis rufipes, 717
within plant distribution, 1035
biological stoichiometry,
Choristoneura, 1
diet-induced thermogenesis, 1
insects, 1
spruce budworm, 1
unbalanced diets, 1
biotypes,
greenbug, 662
insect-plant interactions, 662
plant resistance genes, 662
bird feces,
aphid honeydew, 726
cherry, 726
fecundity, 726
Rhagoletis indifferens, 726
boll weevil, 31, 39, 133, 698
Anthonomus grandis, 31, 39
component ratio, 31
cotton, 39, 698
emergence, 133
feeding, 698
growth reproductive indices, 698
microclimate, 133
natural enemies, 39
overwintering, 133
oviposition, 698
pheromone, 31
vegetative diversity, 39
volatile collection, 31
weeds, 39
Bombus occidentalis,
B. impatiens, 555
bumble bees, 555
genetically modified, 555
insecticides, 555
nontarget insects, 555
bootstrap simulation,
island, 1211
larval distribution, 1211
Pseudaletia unipuncta, 1211
sequential sampling, 1211
boron,
herbivory, 641
iron, 641
plant nutrition, 641
zinc, 641
Borrelia burgdorferi,
habitat, 1010
human risk, 1010
Ixodes pacificus, 1010
Lyme disease, 1010
Brassica plants,
Cotesia glomerata, 163
Cotesia rubecula, 163
natural enemies, 163
Pieris rapae, 163

polycultures, 163
breeding system,
colony fate, 1271
Eastern subterranean termite, 1271
microsatellite markers, 1271
social organization, 1271
brood location,
environmental effects, 204
Solenopsis invicta, 204
Bt,
Helicoverpa zea, 103
host plants, 103
Bt corn, 859, 1164
corn rootworms, 1164
Cry3Bb1, 859
nontarget organisms, 859
Bt cotton, 270, 312
Aphis gossypii, 312
biodiversity, 270
population dynamics, 312
resurgence, 312
Shannon-Weaver diversity index, 270
species richness, 270
transgenic, 270
bumble bees,
B. impatiens, 555
Bombus occidentalis, 555
genetically modified, 555
insecticides, 555
nontarget insects, 555
Bursaphelenchus xylophilus,
developmental response, 96
Monochamus alternatus, 96
nematode virulence, 96
pine wilt disease, 96
vector beetle, 96
Busseola fusca,
Cameroon, 51
egg parasitism, 51
Telenomus spp., 51
yield, 51

C

cactus weevil,
aggregation pheromone, 484
Curculionidae, 484
Metamasius spinolae, 484
Opuntia ficus, 484
cadmium,
catalase, 705
glutathione reductase, 705
glutathione *S*-transferase, 705
insect, 705
thiobarbituric acid reactive substances, 705
Cameroon,
Busseola fusca, 51
egg parasitism, 51
Telenomus spp., 51
yield, 51
Canada,
agroecosystems, 535
biological control, 535
diversity, 535
intercropping, 535
polyculture, 535
cannibalism,
density dependence, 915
Diatraea grandiosella, 915
dispersal, 915
predation, 915
canopy diversity,
Cerambycidae, 1066
flight-interception traps, 1066
temperate forest, 1066
white pine, 1066
Carabidae, 366, 1075, 1370
agroecosystem, 366
Ataenius spretulus, 1370
ecological indicators, 1075
flooding, 1075
generalist predators, 366
habitat fragmentation, 366
isopods, 1075
plot size, 366
predation, 1370
riparian area, 1075
spiders, 366
Staphylinidae, 1370
carbon dioxide enrichment,
Frankliniella occidentalis, 421
Trifolium repens, 421
Western flower thrips, 421
white clover, 421
carbon-based plant defense,
Citrus mealybug, 463
herbivory, 463
nutrient mobility, 463
Solenostemon scutellarioides, 463
variegation, 463
catalase,
cadmium, 705
glutathione reductase, 705
glutathione *S*-transferase, 705
insect, 705
thiobarbituric acid reactive substances, 705
Cerambycidae, 23, 1028, 1066
Anoplophora glabripennis, 1028
canopy diversity, 1066
chemical ecology, 23
Coleoptera, 23
flight-interception traps, 1066
host suitability, 1028
invasive species, 1028
kairomones, 23
Monochamus, 23
oviposition preference, 1028
pest management, 23
temperate forest, 1066
white pine, 1066
Ceratophyllus idius,
fleas, 1045
sex ratio, 1045
Tachycineta bicolor, 1045
tree swallow, 1045
Chamacyparis nootkatensis,
Coptotermes formosanus, 1234
feeding deterrence, 1234
nootkatone, 1234
wood chemistry, 1234
chemical ecology,
Cerambycidae, 23
Coleoptera, 23
kairomones, 23
Monochamus, 23
pest management, 23
cherry,
aphid honeydew, 726
bird feces, 726
fecundity, 726
Rhagoletis indifferens, 726
Chilocorus kuwanae,
Aphytis proclia, 602
Cybocephalus sp.nr. *nipponicus*, 602
distribution, 602
Encarsia citrina, 602
Unaspis euonymi, 602
Choristoneura,
biological stoichiometry, 1
diet-induced thermogenesis, 1
insects, 1
spruce budworm, 1
unbalanced diets, 1
Choristoneura occidentalis,
Douglas-fir, 626
feeding behavior, 626
oviposition behavior, 626
resistance, 626
Choristoneura rosaceana,
geographic variation, 470
obliquebanded leafroller, 470
pheromone chemistry, 470
trap catch, 470
Chorthippus,
alkaloids, 680
decision making, 680
diet shift, 680
graminivory, 680
patchy habitats, 680
chrysanthemum,
dispersal, 1056
Frankliniella occidentalis, 1056
western flower thrips, 1056
Chrysomela scripta,
resistance mechanisms, 452
short-rotation forestry, 452
temporal variation, 452
Chrysomelidae,
Anacassis, 689
Asteraceae, 689
Baccharidastrum, 689

oviposition, 689
Uruguay, 689
Chrysopa,
Bacillus thuringiensis, 407
mites, 407
Orius, 407
rove beetle, 407
Chrysoperla carnea,
cuticular penetration, 196
excretion, 196
IGRs, 196
side-effects, 196
Citrus mealybug,
carbon-based plant defense, 463
herbivory, 463
nutrient mobility, 463
Solenostemon scutellarioides, 463
variegation, 463
citrus whitefly,
biological control, 1105
Coccus hesperidum, 1105
Dialeurodes citri, 1105
Serangium parcesetosum, 1105
clinal latitudinal variation,
development, 340
diapause, 340
Endopiza viteana, 340
phenology, 340
cluster analysis,
community structure, 807
dominant species, 807
mosquitoes, 807
seasonal abundance, 807
Coccinella septempunctata L.,
Aphis gossypii Glover, 151
functional response, 151
leaf area, 151
simulation model, 151
temperature, 151
Coccus hesperidum,
biological control, 1105
citrus whitefly, 1105
Dialeurodes citri, 1105
Serangium parcesetosum, 1105
Coleomegilla maculata, 575, 1131
alternative food, 1131
distribution, 575
Harmonia axyridis, 575, 1131
intra-guild predation, 575
Orius insidiosus, 1131
predator, 1131
sweet corn, 575
Coleoptera, 23, 1262
Cerambycidae, 23
chemical ecology, 23
host use, 1262
kairomones, 23
Monochamus, 23
nested clade analysis, 1262
pest management, 23
phytophagous, 1262
population genetics, 1262
Colombia,
ants, 542
bioindicator, 542
forest fragments, 542
tropical dry forest, 542
Wasmannia auropunctata, 542
colony fate,
breeding system, 1271
Eastern subterranean termite, 1271
microsatellite markers, 1271
social organization, 1271
community composition,
interspecific herbivore competition, 334
Ostrinia nubilalis, 334
oviposition behavior, 334
preference-performance, 334
community structure,
cluster analysis, 807
dominant species, 807
mosquitoes, 807
seasonal abundance, 807
component ratio,
Anthonomus grandis, 31
boll weevil, 31
pheromone, 31
volatile collection, 31
Compsilura concinnata,
hyperparasitoid, 1019
nontarget host, 1019
parasitoid, 1019
Saturniidae, 1019
computer model,
dispersion kernel, 111
long-range dispersal, 111
Lymantria dispar, 111
conservation,
Anastrepha, 1377
host–plant relationships, 1377
parasitoids, 1377
Tephritidae, 1377
conservation biological control,
attraction, 977
herbivore-induced plant volatiles, 977
natural enemies, 977
synomone, 977
conspecific eggs,
bertha armyworm, 529
Mamestra configurata, 529
oviposition, 529
constant temperature,
alternating temperatures, 1337
developmental rate, 1337
Sesamia nonagrioides, 1337
Coptotermes formosanus, 1002, 1234
aggression, 1002
agonistic behavior, 1002
Chamaecyparis nootkatensis, 1234
feeding deterrence, 1234
kin recognition, 1002
nootkatone, 1234
Rhinotermitidae, 1002
wood chemistry, 1234
corn,
Bacillus thuringiensis, 237
Cry1A(b) protein, 237
Danaus plexippus, 237
ecological risk assessment, 237
pollen, 237
corn rootworms,
Bt corn, 1164
cost of resistance,
cross-resistance, 286
TnGV, 286
TnSNPV, 286
Trichoplusia ni nucleopolyhedrovirus, 286
Cotesia glomerata,
Brassica plants, 163
Cotesia rubecula, 163
natural enemies, 163
Pieris rapae, 163
polycultures, 163
Cotesia marginiventris,
fungal infection, 970
plant volatiles, 970
Spodoptera exigua, 970
tritrophic interactions, 970
Cotesia rubecula,
Brassica plants, 163
Cotesia glomerata, 163
natural enemies, 163
Pieris rapae, 163
polycultures, 163
Cotesia sesamiae,
granulocytes, 247
hemocytes, 247
parasitism, 247
plasmatocytes, 247
cotton, 39, 698, 1203, 1399
Anthonomus grandis, 39
Aphis gossypii, 1399
boll weevil, 39, 698
feeding, 698
Geocoris punctipes, 1399
growth reproductive indices, 698
Helicoverpa armigera, 1203
Helicoverpa zea, 1399
natural enemies, 39
oviposition, 698
plant feeding behavior, 1399
sampling, 1203
spatial dispersion, 1203
vegetative diversity, 39
weeds, 39

cotton boll weevil,
fecundity, 592
Insecta, 592
life table, 592
ring-legged earwig, 592
cover crops,
Anagrus, 1085
grapes, 1085
vineyard, 1085
crop rotation,
Diabrotica virgifera virgifera, 992
dispersal, 992
landscape ecology, 992
cross-resistance,
cost of resistance, 286
TnGV, 286
TnSNPV, 286
Trichoplusia ni nucleopolyhedrovirus, 286
Cry1A(b) protein,
Bacillus thuringiensis, 237
corn, 237
Danaus plexippus, 237
ecological risk assessment, 237
pollen, 237
Cry3Bb1,
Bt corn, 859
nontarget organisms, 859
cucurbit,
biological control, 633
escape behavior, 633
predation, 633
predator stimuli, 633
cucurbits,
Bactrocera cucurbitae, 141
Bactrocera dorsalis, 141
natural food sources, 141
pollen, 141
Zea mays, 141
Culex pipiens,
Aedes albopictus, 1313
ecological niche, 1313
exotic species, 1313
larval competition, 1313
cultural control,
host selection, 756
plant–herbivore interactions, 756
reproductive behavior, 756
trap crop, 756
Curculio caryae,
Beauveria bassiana, 187
Heterorhabditis, 187
Metarhizium anisopliae, 187
pecan, 187
Steinernema, 187
Curculionidae,
aggregation pheromone, 484
cactus weevil, 484
Metamasius spinolae, 484
Opuntia ficus, 484
cuticular penetration,
Chrysoperla carnea, 196
excretion, 196
IGRs, 196
side-effects, 196
Cybocephalus sp.nr. *nipponicus*,
Aphytis proclia, 602
Chilocorus kuwanae, 602
distribution, 602
Encarsia citrina, 602
Unaspis euonymi, 602
Cyclocephala borealis,
endophytes, 392
Exomala orientalis, 392
Festuca arundinacea, 392
insect-parasitic nematodes, 392
Popillia japonica, 392
Cyclocephala sp.,
Popillia japonica, 618
Scarabaeidae, 618
soil insects, 618
Tiphia pygidialis, 618
Tiphia vernalis, 618

D

Danaus plexippus,
Bacillus thuringiensis, 237
corn, 237
Cry1A(b) protein, 237
ecological risk assessment, 237
pollen, 237
decision making,
alkaloids, 680
Chorthippus, 680
diet shift, 680
graminivory, 680
patchy habitats, 680
defense against parasitism,
alfalfa weevil, 1123
Bathyplectes curculionis, 1123
encapsulation, 1123
Hypera postica, 1123
defoliation,
herbivore–plant relations, 359
mycorrhiza, 359
restoration forestry, 359
degree-hours,
development time, 290
maternal age, 290
overwintering, 290
quiescence, 290
Trichogramma, 290
Delphinium elatum,
Aesculus parviflora, 873
Pelargonium, 873
Popillia japonica, 873
Dendroctonus,
Ips, 510
logistic regression, 510
Pinus ponderosa, 510
tree mortality, 510
Dendroctonus pseudotsugae,
Douglas-fir beetle, 1354
geographic information system, 1354
geology, 1354
landscape analysis, 1354
density-dependence, 299, 771, 915
cannibalism, 915
Diatraea grandiosella, 915
dispersal, 915
dryland pasture, 771
endophyte, 771
extreme weather, 299
Lolium perenne, 771
nonlinear dynamics, 299
periodic insect outbreaks, 299
population cycles, 299
population dynamics, 771
predation, 915
stochastic perturbation, 299
Derodontidae,
biological control, 1322
Laricobius nigrinus, 1322
temperature-dependent development, 1322
deterrents,
host selection, 1386
plant volatiles, 1386
Spodoptera frugiperda, 1386
tactile cues, 1386
development, 180, 340, 1049
clinal latitudinal variation, 340
diapause, 340
diet, 180
Endopiza viteana, 340
Glyptapanteles militaris, 180
host instar, 1049
larval parasitoid, 180
phenology, 340
Pseudaletia unipuncta, 180
temperature, 1049
threshold, 1049
tritrophic interaction, 180
Venturia canescens, 1049
development time, 290, 717
biological control, 717
degree-hours, 290
fecundity, 717
intrinsic rate of natural increase, 717
maternal age, 290
overwintering, 290
quiescence, 290
Trichogramma, 290
Urolepis rufipes, 717
developmental rate,
alternating temperatures, 1337
constant temperature, 1337
Samia nonagrioides, 1337

developmental response,
Bursaphelenchus xylophilus, 96
Monochamus alternatus, 96
nematode virulence, 96
pine wilt disease, 96
vector beetle, 96
Diabrotica balteata,
artificial diet, 9
inducible defense, 9
Lactuca sativa, 9
latex, 9
plant resistance, 9
Diabrotica speciosa,
Acalymma spp., 276
Diabrotica viridula, 276
host range, 276
host shifts, 276
Diabrotica virgifera virgifera,
crop rotation, 992
dispersal, 992
landscape ecology, 992
Diabrotica viridula,
Acalymma spp., 276
Diabrotica speciosa, 276
host range, 276
host shifts, 276
Dialeurodes citri,
biological control, 1105
citrus whitefly, 1105
Coccus hesperidum, 1105
Serangium parcesetosum, 1105
diapause, 340, 945
clinal latitudinal variation, 340
development, 340
Endopiza viteana, 340
Lygus lineolaris, 945
phenology, 340
photoperiod, 945
tarnished plant bug, 945
Diaprepes abbreviatus,
nutrition, 1242
pathogenesis-related proteins, 1242
root weevil, 1242
Diatraea grandiosella,
cannibalism, 915
density dependence, 915
dispersal, 915
predation, 915
Diatraea saccharalis,
Eoreuma loftini, 886
Galanthus nivalis agglutinin, 886
host plant resistance, 886
pleiotropy, 886
diet,
development, 180
Glyptapanteles militaris, 180
larval parasitoid, 180
Pseudaletia unipuncta, 180
tritrophic interaction, 180
diet shift,
alkaloids, 680
Chorthippus, 680
decision making, 680
graminivory, 680
patchy habitats, 680
diet-induced thermogenesis,
biological stoichiometry, 1
Choristoneura, 1
insects, 1
spruce budworm, 1
unbalanced diets, 1
disease,
biological control, 1171
fire ant, 1171
pathogen, 1171
Solenopsis invicta, 1171
dispersal, 915, 992, 1056
cannibalism, 915
chrysanthemum, 1056
crop rotation, 992
density dependence, 915
Diabrotica virgifera virgifera, 992
Diatraea grandiosella, 915
Frankliniella occidentalis, 1056
landscape ecology, 992
predation, 915
western flower thrips, 1056
dispersal model,
aster yellows, 1177
flight behavior, 1177
mark-release-recapture, 1177
dispersal ranges,
mark-recapture, 71
Plutella xylostella, 71
dispersion kernel,
computer model, 111
long-range dispersal, 111
Lymantria dispar, 111
disruption,
mountain pine beetle, 742
nonhost, 742
spruce beetle, 742
western balsam bark beetle, 742
distribution, 575, 602, 1187
Aphytis proclia, 602
Chilocorus kuwanae, 602
Coleomegilla maculata, 575
Cybocephalus sp.nr. *nipponicus*, 602
ecology, 1187
Encarsia citrina, 602
Endopiza viteana, 1187
grape berry moth, 1187
Harmonia axyridis, 575
intra-guild predation, 575
sweet corn, 575
Unaspis euonymi, 602
Vitis, 1187
diversity, 535, 608
agroecosystems, 535
Bemisia tabaci B-biotype, 608
biological control, 535
Canada, 535
Encarsia, 608
intercropping, 535
parasitoids, 608
polyculture, 535
dominant species,
cluster analysis, 807
community structure, 807
mosquitoes, 807
seasonal abundance, 807
Douglas fir, 477, 626
bark beetles, 477
Choristoneura occidentalis, 626
feeding behavior, 626
oviposition behavior, 626
pest control, 477
pheromones, 477
resistance, 626
Douglas-fir beetle,
Dendroctonus pseudotsugae, 1354
geographic information system, 1354
geology, 1354
landscape analysis, 1354
Drakensberg,
beetles, 797
endemism, 797
niche, 797
vegetation types, 797
Drosophila affinis,
Drosophila melanogaster, 347
Drosophila tripunctata, 347
species abundance, 347
species diversity, 347
urbanization, 347
Drosophila melanogaster,
Drosophila affinis, 347
Drosophila tripunctata, 347
species abundance, 347
species diversity, 347
urbanization, 347
Drosophila tripunctata,
Drosophila affinis, 347
Drosophila melanogaster, 347
species abundance, 347
species diversity, 347
urbanization, 347
dryland pasture,
density dependence, 771
endophyte, 771
Lolium perenne, 771
population dynamics, 771

E

Eastern subterranean termite,
breeding system, 1271
colony fate, 1271

microsatellite markers, 1271
social organization, 1271
ecogeographical Bergmann's rule,
genetic polymorphism, 939
Harmonia axyridis, 939
phenotypes, 939
voracity, 939
ecological indicators,
Carabidae, 1075
flooding, 1075
isopods, 1075
riparian area, 1075
ecological niche,
Aedes albopictus, 1313
Culex pipiens, 1313
exotic species, 1313
larval competition, 1313
ecological risk assessment,
Bacillus thuringiensis, 237
corn, 237
Cry1A(b) protein, 237
Danaus plexippus, 237
pollen, 237
ecology,
distribution, 1187
Endopiza viteana, 1187
grape berry moth, 1187
Vitis, 1187
egg mass size,
egg number, 752
Lymantria xylina, 752
egg number,
egg mass size, 752
Lymantria xylina, 752
egg parasitism,
Busseola fusca, 51
Cameroon, 51
Telenomus spp., 51
yield, 51
egg parasitoid,
Euschistus conspersus, 789
Gryon obesum, 789
host age, 789
patch use, 789
elicitors,
induced resistance, 1196
jasmonic acid, 1196
leafminers, 1196
parasitoids, 1196
emergence, 133, 711
boll weevils, 133
microclimate, 133
mortality, 711
orchard pollination, 711
Osmia lignaria, 711
overwintering, 133
temperature, 711
wintering, 711
encapsulation,
alfalfa weevil, 1123
Bathyplectes curculionis, 1123
defense against parasitism, 1123
Hypera postica, 1123
Encarsia,
Bemisia tabaci B-biotype, 608
diversity, 608
parasitoids, 608
Encarsia citrina,
Aphytis proclia, 602
Chilocorus kuwanae, 602
Cybocephalus sp.nr. *nipponicus*, 602
distribution, 602
Unaspis euonymi, 602
Encarsia transvena,
Bemisia tabaci, 584
host suitability, 584
hyperparasitoid, 584
parasitoid, 584
superparasitism, 584
endemism,
beetles, 797
Drakensberg, 797
niche, 797
vegetation types, 797
endophyte, 392, 771, 895
Cyclocephala borealis, 392
density dependence, 771
dryland pasture, 771
Exomala orientalis, 392, 895
Festuca arundinacea, 392, 895
insect-parasitic nematodes, 392
Lolium perenne, 771
Maladera castanea, 895
Popillia japonica, 392, 895
population dynamics, 771
Endopiza viteana, 340, 1187
clinal latitudinal variation, 340
development, 340
diapause, 340
distribution, 1187
ecology, 1187
grape berry moth, 1187
phenology, 340
Vitis, 1187
entomopathogenic nematodes, 80, 983
biological control, 80, 983
Heterorhabditis bacteriophora, 80, 983
rehydration, 80
soil moisture, 80, 983
Steinernema glaseri, 983
Steinernema spp., 80
environmental effects,
brood location, 204
Solenopsis invicta, 204
Eoreuma loftini,
Diatraea saccharalis, 886
Galanthus nivalis agglutinin, 886
host plant resistance, 886
pleiotropy, 886
escape behavior,
biological control, 633
cucurbit, 633
predation, 633
predator stimuli, 633
estuarine,
algal wrack, 1343
insects, 1343
riparian vegetation, 1343
supralittoral, 1343
Euschistus conspersus,
egg parasitoid, 789
Gryon obesum, 789
host age, 789
patch use, 789
excretion,
Chrysoperla carnea, 196
cuticular penetration, 196
IGRs, 196
side-effects, 196
Exomala orientalis, 392, 895
Cyclocephala borealis, 392
endophytes, 392, 895
Festuca arundinacea, 392, 895
insect-parasitic nematodes, 392
Maladera castanea, 895
Popillia japonica, 392, 895
exotic species,
Aedes albopictus, 1313
Culex pipiens, 1313
ecological niche, 1313
larval competition, 1313
exponential growth,
growth rate, 1305
honey bees, 1305
varroa mites, 1305
extreme weather,
density-dependence, 299
nonlinear dynamics, 299
periodic insect outbreaks, 299
population cycles, 299
stochastic perturbation, 299

F

fecundity, 592, 717, 726
aphid honeydew, 726
biological control, 717
bird feces, 726
cherry, 726
cotton boll weevil, 592
development time, 717
Insecta, 592
intrinsic rate of natural increase, 717
life table, 592
Rhagoletis indifferens, 726
ring-legged earwig, 592
Urolepis rufipes, 717

feeding,
boll weevil, 698
cotton, 698
growth reproductive indices, 698
oviposition, 698
feeding behavior, 626, 953
allelochemicals, 953
apple maggot, 953
Choristoneura occidentalis, 626
Douglas-fir, 626
Malus species, 953
mutualism, 953
oviposition behavior, 626
resistance, 626
feeding deterrence,
Chamacyparis nootkatensis, 1234
Coptotermes formosanus, 1234
nootkatone, 1234
wood chemistry, 1234
Festuca arundinacea, 392, 895
Cyclocephala borealis, 392
endophytes, 392, 895
Exomala orientalis, 392, 895
insect-parasitic nematodes, 392
Maladera castanea, 895
Popillia japonica, 392, 895
field bindweed,
(Z)-11-hexadecenal, 17
(Z)-9-tetradecenal, 17
biological control, 17
sex pheromone, 17
fire,
grazing, 1099
insects, 1099
sandhills prairie, 1099
tallgrass prairie, 1099
fire ant, 1171, 1329
biological control, 1171
disease, 1171
pathogen, 1171
population structure, 1329
Solenopsis invicta, 1171, 1329
South America, 1329
Wolbachia, 1329
fleas,
Ceratophyllus idius, 1045
sex ratio, 1045
Tachycineta bicolor, 1045
tree swallow, 1045
flight behavior,
aster yellows, 1177
dispersal model, 1177
mark-release-recapture, 1177
flight-interception traps,
canopy diversity, 1066
Cerambycidae, 1066
temperate forest, 1066
white pine, 1066
flooding,
Carabidae, 1075
ecological indicators, 1075
isopods, 1075
riparian area, 1075
fluctuating asymmetry,
IPM orchards, 123
organic orchards, 123
population density, 123
Pterostichus melanarius, 123
food source,
Apanteles galleriae, 441
biological control, 441
longevity, 441
temperature, 441
food utilization,
larval development, 765
plant phenology, 765
plant-herbivore interactions, 765
foraging,
Acyrthosiphon pisum, 1219
leaf morphology, 1219
Pisum sativum, 1219
tritrophic interactions, 1219
foraging rates,
bait, 447
Solenopsis invicta, 447
temperature, 447
forced hibernation,
morphological caste differentiation, 175
multivariate analysis, 175
Vespa analis, 175
Xenos moutoni, 175
forest fragments,
ants, 542
bioindicator, 542
Colombia, 542
tropical dry forest, 542
Wasmannia auropunctata, 542
forest management,
host selection, 668
oleoresin, 668
population dynamics, 668
secondary attraction, 668
formicidae,
banana, 816
indicator species, 816
pesticide, 816
Frankliniella occidentalis, 421, 1056
carbon dioxide enrichment, 421
chrysanthemum, 1056
dispersal, 1056
Trifolium repens, 421
Western flower thrips, 421
western flower thrips, 1056
white clover, 421
functional response, 151, 425
Aphidius colemani, 425
Aphis gossypii Glover, 151
biological control, 425
Coccinella septempunctata L., 151
leaf area, 151
Lysiphlebus testaceipes, 425
Schizaphis graminum, 425
simulation model, 151
temperature, 151
fungal infection,
Cotesia marginiventris, 970
plant volatiles, 970
Spodoptera exigua, 970
tritrophic interactions, 970

G

Galanthus nivalis agglutinin,
Diatraea saccharalis, 886
Eoreuma loftini, 886
host plant resistance, 886
pleiotropy, 886
Galendromus occidentalis,
augmentative biological control, 840
generalist predator, 840
Gossypium hirsutum, 840
intraguild predation, 840
gas-exchange,
moisture stress, 433
photosynthesis, 433
soybean, 433
Tetranychus urticae Koch, 433
two-spotted spider mite, 433
generalist predator, 366, 840
agroecosystem, 366
augmentative biological control, 840
Carabidae, 366
Galendromus occidentalis, 840
Gossypium hirsutum, 840
habitat fragmentation, 366
intraguild predation, 840
plot size, 366
spiders, 366
genetic polymorphism,
ecogeographical Bergmann's rule, 939
Harmonia axyridis, 939
phenotypes, 939
voracity, 939
genetically modified,
B. impatiens, 555
Bombus occidentalis, 555
bumble bees, 555
insecticides, 555
nontarget insects, 555
Geocoris punctipes,
Aphis gossypii, 1399
cotton, 1399
Helicoverpa zea, 1399

plant feeding behavior, 1399
Geocoris spp.,
biological control, 907
host plant resistance, 907
predators, 907
turfgrass, 907
geographic information system,
Dendroctonus pseudotsugae, 1354
Douglas-fir beetle, 1354
geology, 1354
landscape analysis, 1354
geographic variation,
Choristoneura rosaceana, 470
obliquebanded leafroller, 470
pheromone chemistry, 470
trap catch, 470
geology,
Dendroctonus pseudotsugae, 1354
Douglas-fir beetle, 1354
geographic information system, 1354
landscape analysis, 1354
glutathione reductase,
cadmium, 705
catalase, 705
glutathione *S*-transferase, 705
insect, 705
thiobarbituric acid reactive substances, 705
glutathione *S*-transferase,
cadmium, 705
catalase, 705
glutathione reductase, 705
insect, 705
thiobarbituric acid reactive substances, 705
Glyptapanteles militaris,
development, 180
diet, 180
larval parasitoid, 180
Pseudaletia unipuncta, 180
tritrophic interaction, 180
Gossypium hirsutum,
augmentative biological control, 840
Galendromus occidentalis, 840
generalist predator, 840
intraguild predation, 840
graminivory,
alkaloids, 680
Chorthippus, 680
decision making, 680
diet shift, 680
patchy habitats, 680
granulocytes,
Cotesia sesamiae, 247
hemocytes, 247
parasitism, 247
plasmatocytes, 247
grape berry moth,
distribution, 1187
ecology, 1187
Endopiza viteana, 1187
Vitis, 1187
grapes,
Anagrus, 1085
cover crops, 1085
vineyard, 1085
grazing,
fire, 1099
insects, 1099
sandhills prairie, 1099
tallgrass prairie, 1099
greenbug,
biotypes, 662
insect-plant interactions, 662
plant resistance genes, 662
greenhouse,
Beauveria bassiana, 1154
beneficial insects, 1154
humidity, 1154
insect mite pests, 1154
growth rate,
exponential growth, 1305
honey bees, 1305
varroa mites, 1305
growth reproductive indices,
boll weevil, 698
cotton, 698
feeding, 698
oviposition, 698
Gryon obesum,
egg parasitoid, 789
Euschistus conspersus, 789
host age, 789
patch use, 789
gypsy moth,
Bacillus thuringiensis, 387
host plant effects, 387
Lymantria dispar, 387
synergism, 387
zwittermicin A, 387

H

habitat,
Borrelia burgdorferi, 1010
human risk, 1010
Ixodes pacificus, 1010
Lyme disease, 1010
habitat fragmentation,
agroecosystem, 366
Carabidae, 366
generalist predators, 366
plot size, 366
spiders, 366
habitat quality,
Hogna helluo, 88
mark-recapture, 88
movement patterns, 88
Pardosa milvina, 88
soybean fields, 88
Harmonia axyridis, 575, 939, 1131
alternative food, 1131
Coleomegilla maculata, 575, 1131
distribution, 575
ecogeographical Bergmann's rule, 939
genetic polymorphism, 939
intra-guild predation, 575
Orius insidiosus, 1131
phenotypes, 939
predator, 1131
sweet corn, 575
voracity, 939
heat degradation,
azadirachtin A, 1283
high-performance liquid chromatography, 1283
postharvest, 1283
Vigna unguiculata, 1283
heat therapy,
Musca domestica, 1146
Muscidifurax raptor, 1146
Nosema, 1146
rifampicin, 1146
Helicoverpa armigera,
cotton, 1203
sampling, 1203
spatial dispersion, 1203
Helicoverpa zea, 103, 1399
Aphis gossypii, 1399
Bt, 103
cotton, 1399
Geocoris punctipes, 1399
host plants, 103
plant feeding behavior, 1399
hemlock woolly adelgid,
Adelges tsugae, 523
insect coldhardiness, 523
Tsuga canadensis, 523
Tsuga caroliniana, 523
hemocytes,
Cotesia sesamiae, 247
granulocytes, 247
parasitism, 247
plasmatocytes, 247
herbivore-induced plant volatiles,
attraction, 977
conservation biological control, 977
natural enemies, 977
synomone, 977
herbivore–plant relations,
defoliation, 359
mycorrhiza, 359
restoration forestry, 359
herbivory, 414, 463, 641
antibiosis, 414
boron, 641
carbon-based plant defense, 463
Citrus mealybug, 463

iron, 641
nutrient mobility, 463
plant defense, 414
plant nutrition, 641
preference, 414
resistance, 414
Solenostemon scutellarioides, 463
variegation, 463
zinc, 641
Heterorhabditis,
Beauveria bassiana, 187
Curculio caryae, 187
Metarhizium anisopliae, 187
pecan, 187
Steinernema, 187
Heterorhabditis bacteriophora, 80, 983
biological control, 80, 983
entomopathogenic nematodes, 80
Entomopathogenic nematodes, 983
rehydration, 80
soil moisture, 80, 983
Steinernema glaseri, 983
Steinernema spp., 80
high-performance liquid chromatography,
azadirachtin A, 1283
heat degradation, 1283
postharvest, 1283
Vigna unguiculata, 1283
Hogna helluo,
habitat quality, 88
mark-recapture, 88
movement patterns, 88
Pardosa milvina, 88
soybean fields, 88
Homorosoma chinensis,
biological control, 229
host specificity, 229
mile-a-minute weed, 229
Polygonum perfoliatum, 229
Timandra griseata, 229
honey bees,
exponential growth, 1305
growth rate, 1305
varroa mites, 1305
host acceptance,
host location, 866
host selection, 866
nontarget effects, 866
transgenic crops, 866
host age,
egg parasitoid, 789
Euschistus conspersus, 789
Gryon obesum, 789
patch use, 789
host instar,
development, 1049
temperature, 1049
threshold, 1049
Venturia canescens, 1049
host location,
host acceptance, 866
host selection, 866
nontarget effects, 866
transgenic crops, 866
host phenology,
mixed fruit orchard, 319
Moran's *I*, 319
spatial autocorrelation, 319
spatial dispersion patterns, 319
host plant effects,
Bacillus thuringiensis, 387
gypsy moth, 387
Lymantria dispar, 387
synergism, 387
zwittermicin A, 387
host plant resistance, 886, 907
biological control, 907
Diatraea saccharalis, 886
Eoreuma loftini, 886
Galanthus nivalis agglutinin, 886
Geocoris spp., 907
pleiotropy, 886
predators, 907
turfgrass, 907
host plants,
Bt, 103
Helicoverpa zea, 103
host preference,
host range, 1227
insect-weed interactions, 1227
Lissorhoptrus oryzophilus Kuschel, 1227
Oryza sativa L., 1227
host range, 276, 1227
Acalymma spp., 276
Diabrotica speciosa, 276
Diabrotica viridula, 276
host preference, 1227
host shifts, 276
insect-weed interactions, 1227
Lissorhoptrus oryzophilus Kuschel, 1227
Oryza sativa L., 1227
host recognition,
biological control, 614
Ixodiphagus hookeri, 614
kairomone, 614
parasitoid, 614
tick, 614
host selection, 668, 756, 866, 963, 1386
bark beetles, 963
cultural control, 756
deterrents, 1386
forest management, 668
host acceptance, 866
host location, 866
landing, 963
nontarget effects, 866
oleoresin, 668
orientation, 963
plant volatiles, 1386
plant–herbivore interactions, 756
population dynamics, 668
reproductive behavior, 756
secondary attraction, 668
semiochemicals, 963
Spodoptera frugiperda, 1386
tactile cues, 1386
transgenic crops, 866
trap crop, 756
host shifts,
Acalymma spp., 276
Diabrotica speciosa, 276
Diabrotica viridula, 276
host range, 276
host specificity,
biological control, 229
Homorosoma chinensis, 229
mile-a-minute weed, 229
Polygonum perfoliatum, 229
Timandra griseata, 229
host suitability, 584, 1028
Anoplophora glabripennis, 1028
Bemisia tabaci, 584
Cerambycidae, 1028
Encarsia transvena, 584
hyperparasitoid, 584
invasive species, 1028
oviposition preference, 1028
parasitoid, 584
superparasitism, 584
host use,
Coleoptera, 1262
nested clade analysis, 1262
phytophagous, 1262
population genetics, 1262
host–plant relationships,
Anastrepha, 1377
conservation, 1377
parasitoids, 1377
Tephritidae, 1377
house fly,
biocontrol, 1139
Musca domestica, 1139
Nosema, 1139
Tachinaephagus zealandicus, 1139
human risk,
Borrelia burgdorferi, 1010
habitat, 1010
Ixodes pacificus, 1010
Lyme disease, 1010
humidity,
Beauveria bassiana, 1154
beneficial insects, 1154
greenhouse, 1154
insect mite pests, 1154

humidity response,
animal orientation, 264
Oryzaephilus surinamensis, 264
sawtoothed grain beetle, 264
stored-product insects, 264
Humulus lupulus,
arthropod diversity, 564
biological control, 564
Tetranychus urticae, 564
Hypera postica,
alfalfa weevil, 1123
Bathyplectes curculionis, 1123
defense against parasitism, 1123
encapsulation, 1123
hyperparasitoid, 584, 1019
Bemisia tabaci, 584
Compsilura concinnata, 1019
Encarsia transvena, 584
host suitability, 584
nontarget host, 1019
parasitoid, 584, 1019
Saturniidae, 1019
superparasitism, 584

I

IGRs,
Chrysoperla carnea, 196
cuticular penetration, 196
excretion, 196
side-effects, 196
impact,
Melaleuca quinquenervia, 397
Oxyops vitiosa, 397
postrelease evaluation, 397
spread, 397
indicator species,
banana, 816
formicidae, 816
pesticide, 816
induced resistance,
elicitors, 1196
jasmonic acid, 1196
leafminers, 1196
parasitoids, 1196
inducible defense,
artificial diet, 9
Diabrotica balteata, 9
Lactuca sativa, 9
latex, 9
plant resistance, 9
infection,
Lepidoptera, 61
life history, 61
nucleopolyhedrovirus, 61
susceptibility, 61
insect, 1, 705, 1099, 1343
algal wrack, 1343
biological stoichiometry, 1
cadmium, 705
catalase, 705
Choristoneura, 1
diet-induced thermogenesis, 1
estuarine, 1343
fire, 1099
glutathione reductase, 705
glutathione *S*-transferase, 705
grazing, 1099
riparian vegetation, 1343
sandhills prairie, 1099
spruce budworm, 1
supralittoral, 1343
tallgrass prairie, 1099
thiobarbituric acid reactive substances, 705
unbalanced diets, 1
insect coldhardiness,
Adelges tsugae, 523
hemlock woolly adelgid, 523
Tsuga canadensis, 523
Tsuga caroliniana, 523
insect mite pests,
Beauveria bassiana, 1154
beneficial insects, 1154
greenhouse, 1154
humidity, 1154
Insecta,
cotton boll weevil, 592
fecundity, 592
life table, 592
ring-legged earwig, 592
insectary rearing,
augmentative biological control, 377
Metaphycus flavus, 377
Metaphycus luteolus, 377
parasitoid, 377
taxonomy, 377
insecticide effects,
Araneae, 830
biological control, 830
Oxyopes salticus, 830
Salticidae, 830
insecticides,
B. impatiens, 555
Bombus occidentalis, 555
bumble bees, 555
genetically modified, 555
nontarget insects, 555
insect-parasitic nematodes,
Cyclocephala borealis, 392
endophytes, 392
Exomala orientalis, 392
Festuca arundinacea, 392
Popillia japonica, 392
insect-plant interactions,
biotypes, 662
greenbug, 662
plant resistance genes, 662
insect-weed interactions,
host preference, 1227
host range, 1227
Lissorhoptrus oryzophilus Kuschel, 1227
Oryza sativa L., 1227
intercropping,
agroecosystems, 535
biological control, 535
Canada, 535
diversity, 535
polyculture, 535
interspecific herbivore competition,
community composition, 334
Ostrinia nubilalis, 334
oviposition behavior, 334
preference-performance, 334
intraguild predation, 256, 575, 840
augmentative biological control, 840
Coleomegilla maculata, 575
distribution, 575
Galendromus occidentalis, 840
generalist predator, 840
Gossypium hirsutum, 840
Harmonia axyridis, 575
lambda-cyhalothrin, 256
mite predator, 256
mobility, 256
sublethal effects, 256
sweet corn, 575
intrinsic rate of natural increase,
biological control, 717
development time, 717
fecundity, 717
Urolepis rufipes, 717
invasive species, 548, 1028
Anoplophora glabripennis, 1028
arthropod diversity, 548
Cerambycidae, 1028
host suitability, 1028
oviposition preference, 1028
partial correlation, 548
Solenopsis invicta, 548
IPM orchards,
fluctuating asymmetry, 123
organic orchards, 123
population density, 123
Pterostichus melanarius, 123
Ips,
Dendroctonus, 510
logistic regression, 510
Pinus ponderosa, 510
tree mortality, 510
iron,
boron, 641
herbivory, 641
plant nutrition, 641
zinc, 641
island,
bootstrap simulation, 1211
larval distribution, 1211
Pseudaletia unipuncta, 1211
sequential sampling, 1211

isopods,
Carabidae, 1075
ecological indicators, 1075
flooding, 1075
riparian area, 1075
Ixodes pacificus,
Borrelia burgdorferi, 1010
habitat, 1010
human risk, 1010
Lyme disease, 1010
Ixodiphagus hookeri,
biological control, 614
host recognition, 614
kairomone, 614
parasitoid, 614
tick, 614

J

jasmonic acid,
elicitors, 1196
induced resistance, 1196
leafminers, 1196
parasitoids, 1196

K

kairomone, 23, 614
biological control, 614
Cerambycidae, 23
chemical ecology, 23
Coleoptera, 23
host recognition, 614
Ixodiphagus hookeri, 614
Monochamus, 23
parasitoid, 614
pest management, 23
tick, 614
kin recognition,
aggression, 1002
agonistic behavior, 1002
Coptotermes formosanus, 1002
Rhinotermitidae, 1002

L

Lactuca sativa,
artificial diet, 9
Diabrotica balteata, 9
inducible defense, 9
latex, 9
plant resistance, 9
lady beetle,
aphid, 1290
biological control, 1290
landscape ecology, 1290
modeling, 1290
lambda-cyhalothrin,
intraguild predation, 256
mite predator, 256
mobility, 256
sublethal effects, 256
landing,
bark beetles, 963
host selection, 963
orientation, 963
semiochemicals, 963
landscape analysis,
Dendroctonus pseudotsugae, 1354
Douglas-fir beetle, 1354
geographic information system, 1354
geology, 1354
landscape ecology, 992, 1290
aphid, 1290
biological control, 1290
crop rotation, 992
Diabrotica virgifera virgifera, 992
dispersal, 992
lady beetle, 1290
modeling, 1290
Laricobius nigrinus,
biological control, 1322
Derodontidae, 1322
temperature-dependent development, 1322
larval competition,
Aedes albopictus, 1313
Culex pipiens, 1313
ecological niche, 1313
exotic species, 1313
larval development, 220, 765
beet armyworm, 220
food utilization, 765
plant biochemistry, 220
plant phenology, 765
plant-herbivore interactions, 765
plant-insect interaction, 220
Spodoptera exigua, 220
white mold, 220
larval distribution,
bootstrap simulation, 1211
island, 1211
Pseudaletia unipuncta, 1211
sequential sampling, 1211
larval parasitoid,
development, 180
diet, 180
Glyptapanteles militaris, 180
Pseudaletia unipuncta, 180
tritrophic interaction, 180
latex,
artificial diet, 9
Diabrotica balteata, 9
inducible defense, 9
Lactuca sativa, 9
plant resistance, 9
leaf area,
Aphis gossypii Glover, 151
Coccinella septempunctata L., 151
functional response, 151
simulation model, 151
temperature, 151
leaf morphology,
Acyrthosiphon pisum, 1219
foraging, 1219
Pisum sativum, 1219
tritrophic interactions, 1219
leafminers,
elicitors, 1196
induced resistance, 1196
jasmonic acid, 1196
parasitoids, 1196
Lepidoptera,
infection, 61
life history, 61
nucleopolyhedrovirus, 61
susceptibility, 61
life history,
infection, 61
Lepidoptera, 61
nucleopolyhedrovirus, 61
susceptibility, 61
life table, 327, 592
cotton boll weevil, 592
fecundity, 592
Insecta, 592
predation rate, 327
Propylaea japonica Thunberg, 327
ring-legged earwig, 592
Lissorhoptrus oryzophilus Kuschel,
host preference, 1227
host range, 1227
insect-weed interactions, 1227
Oryza sativa L., 1227
lodgepole pine,
(Z,Z) 3,13-Octadecadien-1-yl Acetate, 208
seed orchard, 208
Unitrap, 208
wing trap, 208
logistic regression,
Dendroctonus, 510
Ips, 510
Pinus ponderosa, 510
tree mortality, 510
Lolium perenne,
density dependence, 771
dryland pasture, 771
endophyte, 771
population dynamics, 771
longevity,
Apanteles galleriae, 441
biological control, 441
food source, 441
temperature, 441
long-range dispersal,
computer model, 111
dispersion kernel, 111
Lymantria dispar, 111
Lygus lineolaris,
diapause, 945
photoperiod, 945

tarnished plant bug, 945
Lymantria dispar, 111, 387
Bacillus thuringiensis, 387
computer model, 111
dispersion kernel, 111
gypsy moth, 387
host plant effects, 387
long-range dispersal, 111
synergism, 387
zwittermicin A, 387
Lymantria xylina,
egg mass size, 752
egg number, 752
Lyme disease,
Borrelia burgdorferi, 1010
habitat, 1010
human risk, 1010
Ixodes pacificus, 1010
Lysiphlebus testaceipes,
Aphidius colemani, 425
biological control, 425
functional response, 425
Schizaphis graminum, 425

M

Malacosoma disstria,
Populus tremuloides, 214
sex pheromone traps, 214
Maladera castanea,
endophytes, 895
Exomala orientalis, 895
Festuca arundinacea, 895
Popillia japonica, 895
Malus species,
allelochemicals, 953
apple maggot, 953
feeding behavior, 953
mutualism, 953
Mamestra configurata,
bertha armyworm, 529
conspecific eggs, 529
oviposition, 529
mantids,
omnivory, 881
pollen feeding, 881
predation, 881
Tenodera aridifolia sinensis, 881
mark-recapture, 71, 88
dispersal ranges, 71
habitat quality, 88
Hogna helluo, 88
movement patterns, 88
Pardosa milvina, 88
Plutella xylostella, 71
soybean fields, 88
mark-release-recapture,
aster yellows, 1177
dispersal model, 1177
flight behavior, 1177
maternal age,
degree-hours, 290
development time, 290
overwintering, 290
quiescence, 290
Trichogramma, 290
mating disruption,
Noctuidae, 736
pheromone, 736
Trichoplusia ni, 736
Melaleuca quinquenervia,
impact, 397
Oxyops vitiosa, 397
postrelease evaluation, 397
spread, 397
Metamasius spinolae,
aggregation pheromone, 484
cactus weevil, 484
Curculionidae, 484
Opuntia ficus, 484
Metaphycus flavus,
augmentative biological control, 377
insectary rearing, 377
Metaphycus luteolus, 377
parasitoid, 377
taxonomy, 377
Metaphycus luteolus,
augmentative biological control, 377
insectary rearing, 377
Metaphycus flavus, 377
parasitoid, 377
taxonomy, 377
Metarhizium anisopliae,
Beauveria bassiana, 187
Curculio caryae, 187
Heterorhabditis, 187
pecan, 187
Steinernema, 187
microclimate,
boll weevils, 133
emergence, 133
overwintering, 133
microsatellite markers,
breeding system, 1271
colony fate, 1271
Eastern subterranean termite, 1271
social organization, 1271
mile-a-minute weed,
biological control, 229
Homorosoma chinensis, 229
host specificity, 229
Polygonum perfoliatum, 229
Timandra griseata, 229
mite predator,
intraguild predation, 256
lambda-cyhalothrin, 256
mobility, 256
sublethal effects, 256
mites,
Bacillus thuringiensis, 407
Chrysopa, 407
Orius, 407
rove beetle, 407
mixed fruit orchard,
host phenology, 319
Moran's *I*, 319
spatial autocorrelation, 319
spatial dispersion patterns, 319
mobility,
intraguild predation, 256
lambda-cyhalothrin, 256
mite predator, 256
sublethal effects, 256
modeling,
aphid, 1290
biological control, 1290
lady beetle, 1290
landscape ecology, 1290
moisture stress,
gas-exchange, 433
photosynthesis, 433
soybean, 433
Tetranychus urticae Koch, 433
two-spotted spider mite, 433
Monochamus,
Cerambycidae, 23
chemical ecology, 23
Coleoptera, 23
kairomones, 23
pest management, 23
Monochamus alternatus,
Bursaphelenchus xylophilus, 96
developmental response, 96
nematode virulence, 96
pine wilt disease, 96
vector beetle, 96
Moran's *I*,
host phenology, 319
mixed fruit orchard, 319
spatial autocorrelation, 319
spatial dispersion patterns, 319
morphological caste differentiation,
forced hibernation, 175
multivariate analysis, 175
Vespa analis, 175
Xenos moutoni, 175
mortality,
emergence, 711
orchard pollination, 711
Osmia lignaria, 711
temperature, 711
wintering, 711
mosquitoes,
cluster analysis, 807
community structure, 807
dominant species, 807
seasonal abundance, 807

mountain pine beetle,
disruption, 742
nonhost, 742
spruce beetle, 742
western balsam bark beetle, 742
movement,
aphids, 1393
potato, 1393
virus transmission, 1393
movement patterns,
habitat quality, 88
Hogna helluo, 88
mark-recapture, 88
Pardosa milvina, 88
soybean fields, 88
multivariate analysis,
forced hibernation, 175
morphological caste differentiation, 175
Vespa analis, 175
Xenos moutoni, 175
Musca domestica, 1139, 1146
biocontrol, 1139
heat therapy, 1146
house fly, 1139
Muscidifurax raptor, 1146
Nosema, 1139, 1146
rifampicin, 1146
Tachinaephagus zealandicus, 1139
Muscidifurax raptor,
heat therapy, 1146
Musca domestica, 1146
Nosema, 1146
rifampicin, 1146
mutualism,
allelochemicals, 953
apple maggot, 953
feeding behavior, 953
Malus species, 953
mycorrhiza,
defoliation, 359
herbivore–plant relations, 359
restoration forestry, 359

N

natural enemies, 39, 163, 977
Anthonomus grandis, 39
attraction, 977
boll weevil, 39
Brassica plants, 163
conservation biological control, 977
Cotesia glomerata, 163
Cotesia rubecula, 163
cotton, 39
herbivore-induced plant volatiles, 977
Pieris rapae, 163
polycultures, 163
synomone, 977
vegetative diversity, 39
weeds, 39
natural enemy conservation,
augmentation, 1115
biological control, 1115
pheromones, 1115
natural food sources,
Bactrocera cucurbitae, 141
Bactrocera dorsalis, 141
cucurbits, 141
pollen, 141
Zea mays, 141
nematode virulence,
Bursaphelenchus xylophilus, 96
developmental response, 96
Monochamus alternatus, 96
pine wilt disease, 96
vector beetle, 96
nested clade analysis,
Coleoptera, 1262
host use, 1262
phytophagous, 1262
population genetics, 1262
niche,
beetles, 797
Drakensberg, 797
endemism, 797
vegetation types, 797
Noctuidae,
mating disruption, 736
pheromone, 736
Trichoplusia ni, 736
nonhost,
disruption, 742
mountain pine beetle, 742
spruce beetle, 742
western balsam bark beetle, 742
nonlinear dynamics,
density-dependence, 299
extreme weather, 299
periodic insect outbreaks, 299
population cycles, 299
stochastic perturbation, 299
nontarget effects,
host acceptance, 866
host location, 866
host selection, 866
transgenic crops, 866
nontarget host,
Compsilura concinnata, 1019
hyperparasitoid, 1019
parasitoid, 1019
Saturniidae, 1019
nontarget insects,
B. impatiens, 555
Bombus occidentalis, 555
bumble bees, 555
genetically modified, 555
insecticides, 555
nontarget Lepidoptera,
Bacillus thuringiensis variety *kurstaki*, 1364
nontarget organisms,
Bt corn, 859
Cry3Bb1, 859
nootkatone,
Chamacyparis nootkatensis, 1234
Coptotermes formosanus, 1234
feeding deterrence, 1234
wood chemistry, 1234
Nosema, 1139, 1146
biocontrol, 1139
heat therapy, 1146
house fly, 1139
Musca domestica, 1139, 1146
Muscidifurax raptor, 1146
rifampicin, 1146
Tachinaephagus zealandicus, 1139
nucleopolyhedrovirus,
infection, 61
Lepidoptera, 61
life history, 61
susceptibility, 61
nutrient mobility,
carbon-based plant defense, 463
Citrus mealybug, 463
herbivory, 463
Solenostemon scutellarioides, 463
variegation, 463
nutrition,
Diaprepes abbreviatus, 1242
pathogenesis-related proteins, 1242
root weevil, 1242

O

obliquebanded leafroller,
Choristoneura rosaceana, 470
geographic variation, 470
pheromone chemistry, 470
trap catch, 470
oleoresin,
forest management, 668
host selection, 668
population dynamics, 668
secondary attraction, 668
omnivory,
mantids, 881
pollen feeding, 881
predation, 881
Tenodera aridifolia sinensis, 881
optimal sampling,
agrobiodiversity, 929
quadrat size, 929
tropical rice, 929
Wiegert's method, 929

Opuntia ficus,
aggregation pheromone, 484
cactus weevil, 484
Curculionidae, 484
Metamasius spinolae, 484
orchard pollination,
emergence, 711
mortality, 711
Osmia lignaria, 711
temperature, 711
wintering, 711
organic orchards,
fluctuating asymmetry, 123
IPM orchards, 123
population density, 123
Pterostichus melanarius, 123
Oriental fruit moth,
parasitoids, 780
peach orchards, 780
predators, 780
sentinel eggs, 780
orientation,
bark beetles, 963
host selection, 963
landing, 963
semiochemicals, 963
Orius,
Bacillus thuringiensis, 407
Chrysopa, 407
mites, 407
rove beetle, 407
Orius insidiosus,
alternative food, 1131
Coleomegilla maculata, 1131
Harmonia axyridis, 1131
predator, 1131
Oryza sativa L.,
host preference, 1227
host range, 1227
insect-weed interactions, 1227
Lissorhoptrus oryzophilus Kuschel, 1227
Oryzaephilus surinamensis,
animal orientation, 264
humidity response, 264
sawtoothed grain beetle, 264
stored-product insects, 264
Osmia lignaria,
emergence, 711
mortality, 711
orchard pollination, 711
temperature, 711
wintering, 711
Ostrinia nubilalis,
community composition, 334
interspecific herbivore competition, 334
oviposition behavior, 334
preference-performance, 334
overwintering, 133, 290
boll weevils, 133
degree-hours, 290
development time, 290
emergence, 133
maternal age, 290
microclimate, 133
quiescence, 290
Trichogramma, 290
oviposition, 529, 689, 698
Anacassis, 689
Asteraceae, 689
Baccharidastrum, 689
bertha armyworm, 529
boll weevil, 698
Chrysomelidae, 689
conspecific eggs, 529
cotton, 698
feeding, 698
growth reproductive indices, 698
Mamestra configurata, 529
Uruguay, 689
oviposition behavior, 334, 626
Choristoneura occidentalis, 626
community composition, 334
Douglas-fir, 626
feeding behavior, 626
interspecific herbivore competition, 334
Ostrinia nubilalis, 334
preference-performance, 334
resistance, 626
oviposition preference,
Anoplophora glabripennis, 1028
Cerambycidae, 1028
host suitability, 1028
invasive species, 1028
Oxyopes salticus,
Araneae, 830
biological control, 830
insecticide effects, 830
Salticidae, 830
Oxyops vitiosa,
impact, 397
Melaleuca quinquenervia, 397
postrelease evaluation, 397
spread, 397

P

parasitism,
Cotesia sesamiae, 247
granulocytes, 247
hemocytes, 247
plasmatocytes, 247
parasitoid, 377, 488, 584, 608, 614, 780, 1019, 1196, 1377
Anastrepha, 1377
Angoumois grain moth, 488
augmentative biological control, 377
Bemisia tabaci, 584
Bemisia tabaci B-biotype, 608
biological control, 614
Compsilura concinnata, 1019
conservation, 1377
diversity, 608
elicitors, 1196
Encarsia, 608
Encarsia transvena, 584
host-plant relationships, 1377
host recognition, 614
host suitability, 584
hyperparasitoid, 584, 1019
induced resistance, 1196
insectary rearing, 377
Ixodiphagus hookeri, 614
jasmonic acid, 1196
kairomone, 614
leafminers, 1196
Metaphycus flavus, 377
Metaphycus luteolus, 377
nontarget host, 1019
Oriental fruit moth, 780
peach orchards, 780
population dynamics, 488
predators, 780
protease inhibitors, 488
Saturniidae, 1019
sentinel eggs, 780
Sitotroga cerealella, 488
superparasitism, 584
taxonomy, 377
Tephritidae, 1377
tick, 614
Pardosa milvina,
habitat quality, 88
Hogna helluo, 88
mark-recapture, 88
movement patterns, 88
soybean fields, 88
partial correlation,
arthropod diversity, 548
invasive species, 548
Solenopsis invicta, 548
patch use,
egg parasitoid, 789
Euschistus conspersus, 789
Gryon obesum, 789
host age, 789
patchy habitats,
alkaloids, 680
Chorthippus, 680
decision making, 680
diet shift, 680
graminivory, 680
pathogen,
biological control, 1171
disease, 1171
fire ant, 1171
Solenopsis invicta, 1171
pathogenesis-related proteins,
Diaprepes abbreviatus, 1242
nutrition, 1242
root weevil, 1242

peach orchards,
Oriental fruit moth, 780
parasitoids, 780
predators, 780
sentinel eggs, 780
pecan,
Beauveria bassiana, 187
Curculio caryae, 187
Heterorhabditis, 187
Metarhizium anisopliae, 187
Steinernema, 187
Pelargonium,
Aesculus parviflora, 873
Delphinium elatum, 873
Popillia japonica, 873
pepper,
Anthocoridae, 1035
biological control, 1035
Thripidae, 1035
within plant distribution, 1035
periodic insect outbreaks,
density-dependence, 299
extreme weather, 299
nonlinear dynamics, 299
population cycles, 299
stochastic perturbation, 299
pest control,
bark beetles, 477
Douglas fir, 477
pheromones, 477
pest management,
Cerambycidae, 23
chemical ecology, 23
Coleoptera, 23
kairomones, 23
Monochamus, 23
pesticide,
banana, 816
formicidae, 816
indicator species, 816
phenology,
clinal latitudinal variation, 340
development, 340
diapause, 340
Endopiza viteana, 340
phenotypes,
ecogeographical Bergmann's rule, 939
genetic polymorphism, 939
Harmonia axyridis, 939
voracity, 939
pheromone, 31, 477, 736, 1115
Anthonomus grandis, 31
augmentation, 1115
bark beetles, 477
biological control, 1115
boll weevil, 31
component ratio, 31
Douglas fir, 477
mating disruption, 736
natural enemy conservation, 1115
Noctuidae, 736
pest control, 477
Trichoplusia ni, 736
volatile collection, 31
pheromone chemistry,
Choristoneura rosaceana, 470
geographic variation, 470
obliquebanded leafroller, 470
trap catch, 470
photoperiod,
diapause, 945
Lygus lineolaris, 945
tarnished plant bug, 945
photosynthesis, 433, 652
bark beetle, 652
gas-exchange, 433
moisture stress, 433
ponderosa pine, 652
prescribed burn, 652
soybean, 433
Tetranychus urticae Koch, 433
tree water relations, 652
two-spotted spider mite, 433
phytophagous,
Coleoptera, 1262
host use, 1262
nested clade analysis, 1262
population genetics, 1262
Pieris rapae,
Brassica plants, 163
Cotesia glomerata, 163
Cotesia rubecula, 163
natural enemies, 163
polycultures, 163
pine wilt disease,
Bursaphelenchus xylophilus, 96
developmental response, 96
Monochamus alternatus, 96
nematode virulence, 96
vector beetle, 96
Pinus ponderosa,
Dendroctonus, 510
Ips, 510
logistic regression, 510
tree mortality, 510
Pisum sativum,
Acyrthosiphon pisum, 1219
foraging, 1219
leaf morphology, 1219
tritrophic interactions, 1219
plant biochemistry,
beet armyworm, 220
larval development, 220
plant-insect interaction, 220
Spodoptera exigua, 220
white mold, 220
plant defense,
antibiosis, 414
herbivory, 414
preference, 414
resistance, 414
plant feeding behavior,
Aphis gossypii, 1399
cotton, 1399
Geocoris punctipes, 1399
Helicoverpa zea, 1399
plant nutrition,
boron, 641
herbivory, 641
iron, 641
zinc, 641
plant phenology,
food utilization, 765
larval development, 765
plant-herbivore interactions, 765
plant resistance,
artificial diet, 9
Diabrotica balteata, 9
inducible defense, 9
Lactuca sativa, 9
latex, 9
plant resistance genes,
biotypes, 662
greenbug, 662
insect-plant interactions, 662
plant volatiles, 970, 1386
Cotesia marginiventris, 970
deterrents, 1386
fungal infection, 970
host selection, 1386
Spodoptera exigua, 970
Spodoptera frugiperda, 1386
tactile cues, 1386
tritrophic interactions, 970
plant–herbivore interactions, 220, 756
beet armyworm, 220
cultural control, 756
food utilization, 765
host selection, 756
larval development, 220, 765
plant biochemistry, 220
plant phenology, 765
reproductive behavior, 756
trap crop, 756
Spodoptera exigua, 220
white mold, 220
plasmatocytes,
Cotesia sesamiae, 247
granulocytes, 247
hemocytes, 247
parasitism, 247
pleiotropy,
Diatraea saccharalis, 886
Eoreuma loftini, 886
Galanthus nivalis agglutinin, 886
host plant resistance, 886
plot size,
agroecosystem, 366
Carabidae, 366
generalist predators, 366

habitat fragmentation, 366
spiders, 366
Plutella xylostella,
dispersal ranges, 71
mark-recapture, 71
pollen, 141, 237
Bacillus thuringiensis, 237
Bactrocera cucurbitae, 141
Bactrocera dorsalis, 141
corn, 237
Cry1A(b) protein, 237
cucurbits, 141
Danaus plexippus, 237
ecological risk assessment, 237
natural food sources, 141
Zea mays, 141
pollen feeding,
mantids, 881
omnivory, 881
predation, 881
Tenodera aridifolia sinensis, 881
polyculture, 163, 535
agroecosystems, 535
biological control, 535
Brassica plants, 163
Canada, 535
Cotesia glomerata, 163
Cotesia rubecula, 163
diversity, 535
intercropping, 535
natural enemies, 163
Pieris rapae, 163
Polygonum perfoliatum,
biological control, 229
Homorosoma chinensis, 229
host specificity, 229
mile-a-minute weed, 229
Timandra griseata, 229
ponderosa pine,
bark beetle, 652
photosynthesis, 652
prescribed burn, 652
tree water relations, 652
Popillia japonica, 392, 618, 873, 895
Aesculus parviflora, 873
Cyclocephala borealis, 392
Cyclocephala sp., 618
Delphinium elatum, 873
endophytes, 392, 895
Exomala orientalis, 392, 895
Festuca arundinacea, 392, 895
insect-parasitic nematodes, 392
Maladera castanea, 895
Pelargonium, 873
Scarabaeidae, 618
soil insects, 618
Tiphia pygidialis, 618
Tiphia vernalis, 618
population cycles,
density-dependence, 299
extreme weather, 299
nonlinear dynamics, 299
periodic insect outbreaks, 299
stochastic perturbation, 299
population density,
fluctuating asymmetry, 123
IPM orchards, 123
organic orchards, 123
Pterostichus melanarius, 123
population dynamics, 312, 488, 668, 771
Angoumois grain moth, 488
Aphis gossypii, 312
Bt cotton, 312
density dependence, 771
dryland pasture, 771
endophyte, 771
forest management, 668
host selection, 668
Lolium perenne, 771
oleoresin, 668
parasitoids, 488
protease inhibitors, 488
resurgence, 312
secondary attraction, 668
Sitotroga cerealella, 488
population genetics,
Coleoptera, 1262
host use, 1262
nested clade analysis, 1262
phytophagous, 1262
population structure,
fire ants, 1329
Solenopsis invicta, 1329
South America, 1329
Wolbachia, 1329
Populus tremuloides,
Malacosoma disstria, 214
sex pheromone traps, 214
postharvest,
azadirachtin A, 1283
heat degradation, 1283
high-performance liquid chromatography, 1283
Vigna unguiculata, 1283
postrelease evaluation,
impact, 397
Melaleuca quinquenervia, 397
Oxyops vitiosa, 397
spread, 397
potato,
aphids, 1393
movement, 1393
virus transmission, 1393
Potyvirus,
aphids, 499
seasonal abundance, 499
tobacco etch virus, 499
predation, 633, 881, 915, 1370
Ataenius spretulus, 1370
biological control, 633
cannibalism, 915
Carabidae, 1370
cucurbit, 633
density dependence, 915
Diatraea grandiosella, 915
dispersal, 915
escape behavior, 633
mantids, 881
omnivory, 881
pollen feeding, 881
predator stimuli, 633
Staphylinidae, 1370
Tenodera aridifolia sinensis, 881
predation rate,
life table, 327
Propylaea japonica Thunberg, 327
predator, 780, 907, 1131
alternative food, 1131
biological control, 907
Coleomegilla maculata, 1131
Geocoris spp., 907
Harmonia axyridis, 1131
host plant resistance, 907
Oriental fruit moth, 780
Orius insidiosus, 1131
parasitoids, 780
peach orchards, 780
sentinel eggs, 780
turfgrass, 907
predator stimuli,
biological control, 633
cucurbit, 633
escape behavior, 633
predation, 633
preference,
antibiosis, 414
herbivory, 414
plant defense, 414
resistance, 414
preference-performance,
community composition, 334
interspecific herbivore competition, 334
Ostrinia nubilalis, 334
oviposition behavior, 334
prescribed burn,
bark beetle, 652
photosynthesis, 652
ponderosa pine, 652
tree water relations, 652
Propylaea japonica Thunberg,
life table, 327
predation rate, 327
protease inhibitors,
Angoumois grain moth, 488
parasitoids, 488
population dynamics, 488

Sitotroga cerealella, 488
Pseudaletia unipuncta, 180, 1211
bootstrap simulation, 1211
development, 180
diet, 180
Glyptapanteles militaris, 180
island, 1211
larval distribution, 1211
larval parasitoid, 180
sequential sampling, 1211
tritrophic interaction, 180
Pterostichus melanarius,
fluctuating asymmetry, 123
IPM orchards, 123
organic orchards, 123
population density, 123

Q

quadrat size,
agrobiodiversity, 929
optimal sampling, 929
tropical rice, 929
Wiegert's method, 929
quiescence,
degree-hours, 290
development time, 290
maternal age, 290
overwintering, 290
Trichogramma, 290

R

rehydration,
biological control, 80
entomopathogenic nematodes, 80
Heterorhabditis bacteriophora, 80
soil moisture, 80
Steinernema spp., 80
reproductive behavior,
cultural control, 756
host selection, 756
plant–herbivore interactions, 756
trap crop, 756
resistance, 414, 626
antibiosis, 414
Choristoneura occidentalis, 626
Douglas-fir, 626
feeding behavior, 626
herbivory, 414
oviposition behavior, 626
plant defense, 414
preference, 414
resistance mechanisms,
Chrysomela scripta, 452
short-rotation forestry, 452
temporal variation, 452
restoration forestry,
defoliation, 359
herbivore–plant relations, 359
mycorrhiza, 359
resurgence,
Aphis gossypii, 312
Bt cotton, 312
population dynamics, 312
Rhagoletis indifferens,
aphid honeydew, 726
bird feces, 726
cherry, 726
fecundity, 726
Rhinotermitidae,
aggression, 1002
agonistic behavior, 1002
Coptotermes formosanus, 1002
kin recognition, 1002
rifampicin,
heat therapy, 1146
Musca domestica, 1146
Muscidifurax raptor, 1146
Nosema, 1146
ring-legged earwig,
cotton boll weevil, 592
fecundity, 592
Insecta, 592
life table, 592
riparian area,
Carabidae, 1075
ecological indicators, 1075
flooding, 1075
isopods, 1075
riparian vegetation,
algal wrack, 1343
estuarine, 1343
insects, 1343
supralittoral, 1343
root weevil,
Diaprepes abbreviatus, 1242
nutrition, 1242
pathogenesis-related proteins, 1242
rove beetle,
Bacillus thuringiensis, 407
Chrysopa, 407
mites, 407
Orius, 407

S

Salticidae,
Araneae, 830
biological control, 830
insecticide effects, 830
Oxyopes salticus, 830
sampling,
cotton, 1203
Helicoverpa armigera, 1203
spatial dispersion, 1203
sandhills prairie,
fire, 1099
grazing, 1099
insects, 1099
tallgrass prairie, 1099
Saturniidae,
Compsilura concinnata, 1019
hyperparasitoid, 1019
nontarget host, 1019
parasitoid, 1019
sawtoothed grain beetle,
animal orientation, 264
humidity response, 264
Oryzaephilus surinamensis, 264
stored-product insects, 264
Scarabaeidae,
Cyclocephala sp., 618
Popillia japonica, 618
soil insects, 618
Tiphia pygidialis, 618
Tiphia vernalis, 618
Schizaphis graminum,
Aphidius colemani, 425
biological control, 425
functional response, 425
Lysiphlebus testaceipes, 425
Scutigerella immaculata,
Akaike information criteria, 1251
soil ecology, 1251
spatial autocorrelation, 1251
symphyla, 1251
seasonal abundance, 499, 807
aphids, 499
cluster analysis, 807
community structure, 807
dominant species, 807
mosquitoes, 807
Potyvirus, 499
tobacco etch virus, 499
secondary attraction,
forest management, 668
host selection, 668
oleoresin, 668
population dynamics, 668
seed orchard,
(Z,Z) 3,13-Octadecadien-1-yl Acetate, 208
lodgepole pine, 208
Unitrap, 208
wing trap, 208
semiochemicals,
bark beetles, 963
host selection, 963
landing, 963
orientation, 963
sentinel eggs,
Oriental fruit moth, 780
parasitoids, 780
peach orchards, 780
predators, 780
sequential sampling,
bootstrap simulation, 1211
island, 1211
larval distribution, 1211
Pseudaletia unipuncta, 1211

Serangium parcesetosum,
biological control, 1105
citrus whitefly, 1105
Coccus hesperidum, 1105
Dialeurodes citri, 1105
Sesamia nonagrioides,
alternating temperatures, 1337
constant temperature, 1337
developmental rate, 1337
sex pheromone,
(Z)-11-hexadecenal, 17
(Z)-9-tetradecenal, 17
biological control, 17
field bindweed, 17
sex pheromone traps,
Malacosoma disstria, 214
Populus tremuloides, 214
sex ratio,
Ceratophyllus idius, 1045
fleas, 1045
Tachycineta bicolor, 1045
tree swallow, 1045
Shannon-Weaver diversity index,
biodiversity, 270
Bt-cotton, 270
species richness, 270
transgenic, 270
short-rotation forestry,
Chrysomela scripta, 452
resistance mechanisms, 452
temporal variation, 452
side-effects,
Chrysoperla carnea, 196
cuticular penetration, 196
excretion, 196
IGRs, 196
simulation model,
Aphis gossypii Glover, 151
Coccinella septempunctata L., 151
functional response, 151
leaf area, 151
temperature, 151
Sitotroga cerealella,
Angoumois grain moth, 488
parasitoids, 488
population dynamics, 488
protease inhibitors, 488
social organization,
breeding system, 1271
colony fate, 1271
Eastern subterranean termite, 1271
microsatellite markers, 1271
soil ecology,
Akaike information criteria, 1251
Scutigerella immaculata, 1251
spatial autocorrelation, 1251
symphyla, 1251
soil insects,
Cyclocephala sp., 618
Popillia japonica, 618
Scarabaeidae, 618
Tiphia pygidialis, 618
Tiphia vernalis, 618
soil moisture, 80, 983
biological control, 80, 983
entomopathogenic nematodes, 80
Entomopathogenic nematodes, 983
Heterorhabditis bacteriophora, 80, 983
rehydration, 80
Steinernema glaseri, 983
Steinernema spp., 80
Solenopsis invicta, 204, 447, 548, 1171, 1329
arthropod diversity, 548
bait, 447
biological control, 1171
brood location, 204
disease, 1171
environmental effects, 204
fire ant, 1171
fire ants, 1329
foraging rates, 447
invasive species, 548
partial correlation, 548
pathogen, 1171
population structure, 1329
South America, 1329
temperature, 447
Wolbachia, 1329
Solenostemon scutellarioides,
carbon-based plant defense, 463
Citrus mealybug, 463
herbivory, 463
nutrient mobility, 463
variegation, 463
South America,
fire ants, 1329
population structure, 1329
Solenopsis invicta, 1329
Wolbachia, 1329
soybean,
gas-exchange, 433
moisture stress, 433
photosynthesis, 433
Tetranychus urticae Koch, 433
two-spotted spider mite, 433
soybean fields,
habitat quality, 88
Hogna helluo, 88
mark-recapture, 88
movement patterns, 88
Pardosa milvina, 88
spatial autocorrelation, 319, 1251
Akaike information criteria, 1251
host phenology, 319
mixed fruit orchard, 319
Moran's *I*, 319
Scutigerella immaculata, 1251
soil ecology, 1251
spatial dispersion patterns, 319
symphyla, 1251
spatial dispersion,
cotton, 1203
Helicoverpa armigera, 1203
sampling, 1203
spatial dispersion patterns,
host phenology, 319
mixed fruit orchard, 319
Moran's *I*, 319
spatial autocorrelation, 319
species abundance,
Drosophila affinis, 347
Drosophila melanogaster, 347
Drosophila tripunctata, 347
species diversity, 347
urbanization, 347
species diversity,
Drosophila affinis, 347
Drosophila melanogaster, 347
Drosophila tripunctata, 347
species abundance, 347
urbanization, 347
species richness,
biodiversity, 270
Bt-cotton, 270
Shannon-Weaver diversity index, 270
transgenic, 270
spiders,
agroecosystem, 366
Carabidae, 366
generalist predators, 366
habitat fragmentation, 366
plot size, 366
Spodoptera exigua, 220, 970
beet armyworm, 220
Cotesia marginiventris, 970
fungal infection, 970
larval development, 220
plant biochemistry, 220
plant volatiles, 970
plant-insect interaction, 220
tritrophic interactions, 970
white mold, 220
Spodoptera frugiperda,
deterrents, 1386
host selection, 1386
plant volatiles, 1386
tactile cues, 1386
spread,
impact, 397
Melaleuca quinquenervia, 397
Oxyops vitiosa, 397
postrelease evaluation, 397

spruce beetle,
disruption, 742
mountain pine beetle, 742
nonhost, 742
western balsam bark beetle, 742
spruce budworm,
biological stoichiometry, 1
Choristoneura, 1
diet-induced thermogenesis, 1
insects, 1
unbalanced diets, 1
Staphylinidae,
Ataenius spretulus, 1370
Carabidae, 1370
predation, 1370
Steinernema,
Beauveria bassiana, 187
Curculio caryae, 187
Heterorhabditis, 187
Metarhizium anisopliae, 187
pecan, 187
Steinernema glaseri,
biological control, 983
Entomopathogenic nematodes, 983
Heterorhabditis bacteriophora, 983
soil moisture, 983
Steinernema spp.,
biological control, 80
entomopathogenic nematodes, 80
Heterorhabditis bacteriophora, 80
rehydration, 80
soil moisture, 80
stochastic perturbation,
density-dependence, 299
extreme weather, 299
nonlinear dynamics, 299
periodic insect outbreaks, 299
population cycles, 299
stored-product insects,
animal orientation, 264
humidity response, 264
Oryzaephilus surinamensis, 264
sawtoothed grain beetle, 264
sublethal effects,
intraguild predation, 256
lambda-cyhalothrin, 256
mite predator, 256
mobility, 256
superparasitism,
Bemisia tabaci, 584
Encarsia transvena, 584
host suitability, 584
hyperparasitoid, 584
parasitoid, 584
supralittoral,
algal wrack, 1343
estuarine, 1343
insects, 1343
riparian vegetation, 1343
susceptibility,
infection, 61
Lepidoptera, 61
life history, 61
nucleopolyhedrovirus, 61
sweet corn,
Coleomegilla maculata, 575
distribution, 575
Harmonia axyridis, 575
intra-guild predation, 575
symphyla,
Akaike information criteria, 1251
Scutigerella immaculata, 1251
soil ecology, 1251
spatial autocorrelation, 1251
synergism,
Bacillus thuringiensis, 387
gypsy moth, 387
host plant effects, 387
Lymantria dispar, 387
zwittermicin A, 387
synomone,
attraction, 977
conservation biological control, 977
herbivore-induced plant volatiles, 977
natural enemies, 977

T

Tachinaephagus zealandicus,
biocontrol, 1139
house fly, 1139
Musca domestica, 1139
Nosema, 1139
Tachycineta bicolor,
Ceratophyllus idius, 1045
fleas, 1045
sex ratio, 1045
tree swallow, 1045
tactile cues,
deterrents, 1386
host selection, 1386
plant volatiles, 1386
Spodoptera frugiperda, 1386
tallgrass prairie,
fire, 1099
grazing, 1099
insects, 1099
sandhills prairie, 1099
tarnished plant bug,
diapause, 945
Lygus lineolaris, 945
photoperiod, 945
taxonomy,
augmentative biological control, 377
insectary rearing, 377
Metaphycus flavus, 377
Metaphycus luteolus, 377
parasitoid, 377
Telenomus spp.,
Busseola fusca, 51
Cameroon, 51
egg parasitism, 51
yield, 51
temperate forest,
canopy diversity, 1066
Cerambycidae, 1066
flight-interception traps, 1066
white pine, 1066
temperature, 151, 441, 447, 711, 1049
Apanteles galleriae, 441
Aphis gossypii Glover, 151
bait, 447
biological control, 441
Coccinella septempunctata L., 151
development, 1049
emergence, 711
food source, 441
foraging rates, 447
functional response, 151
host instar, 1049
leaf area, 151
longevity, 441
mortality, 711
orchard pollination, 711
Osmia lignaria, 711
simulation model, 151
Solenopsis invicta, 447
threshold, 1049
Venturia canescens, 1049
wintering, 711
temperature-dependent development,
biological control, 1322
Derodontidae, 1322
Laricobius nigrinus, 1322
temporal variation,
Chrysomela scripta, 452
resistance mechanisms, 452
short-rotation forestry, 452
Tenodera aridifolia sinensis,
mantids, 881
omnivory, 881
pollen feeding, 881
predation, 881
Tephritidae,
Anastrepha, 1377
conservation, 1377
host–plant relationships, 1377
parasitoids, 1377
Tetranychus urticae,
arthropod diversity, 564
biological control, 564
Humulus lupulus, 564
Tetranychus urticae Koch,
gas-exchange, 433
moisture stress, 433

photosynthesis, 433
soybean, 433
two-spotted spider mite, 433
thiobarbituric acid reactive substances,
cadmium, 705
catalase, 705
glutathione reductase, 705
glutathione S-transferase, 705
insect, 705
threshold,
development, 1049
host instar, 1049
temperature, 1049
Venturia canescens, 1049
Thripidae,
Anthocoridae, 1035
biological control, 1035
pepper, 1035
within plant distribution, 1035
Thripinema nicklewoodi,
tomato spotted wilt virus, 853
tospovirus, 853
virus-vector relations, 853
western flower thrips, 853
tick,
biological control, 614
host recognition, 614
Ixodiphagus hookeri, 614
kairomone, 614
parasitoid, 614
Timandra griseata,
biological control, 229
Homorosoma chinensis, 229
host specificity, 229
mile-a-minute weed, 229
Polygonum perfoliatum, 229
Tiphia pygidialis,
Cyclocephala sp., 618
Popillia japonica, 618
Scarabaeidae, 618
soil insects, 618
Tiphia vernalis, 618
Tiphia vernalis,
Cyclocephala sp., 618
Popillia japonica, 618
Scarabaeidae, 618
soil insects, 618
Tiphia pygidialis, 618
TnGV,
cost of resistance, 286
cross-resistance, 286
TnSNPV, 286
Trichoplusia ni nucleopolyhedrovirus, 286
TnSNPV,
cost of resistance, 286
cross-resistance, 286
TnGV, 286
Trichoplusia ni nucleopolyhedrovirus, 286
tobacco etch virus,
aphids, 499
Potyvirus, 499
seasonal abundance, 499
tomato spotted wilt virus,
Thripinema nicklewoodi, 853
tospovirus, 853
virus-vector relations, 853
western flower thrips, 853
tospovirus,
Thripinema nicklewoodi, 853
tomato spotted wilt virus, 853
virus-vector relations, 853
western flower thrips, 853
transgenic,
biodiversity, 270
Bt-cotton, 270
Shannon-Weaver diversity index, 270
species richness, 270
transgenic crops,
host acceptance, 866
host location, 866
host selection, 866
nontarget effects, 866
trap catch,
Choristoneura rosaceana, 470
geographic variation, 470
obliquebanded leafroller, 470
pheromone chemistry, 470
trap crop,
cultural control, 756
host selection, 756
plant–herbivore interactions, 756
reproductive behavior, 756
tree mortality,
Dendroctonus, 510
Ips, 510
logistic regression, 510
Pinus ponderosa, 510
tree swallow,
Ceratophyllus idius, 1045
fleas, 1045
sex ratio, 1045
Tachycineta bicolor, 1045
tree water relations,
bark beetle, 652
photosynthesis, 652
ponderosa pine, 652
prescribed burn, 652
Trichogramma,
degree-hours, 290
development time, 290
maternal age, 290
overwintering, 290
quiescence, 290
Trichoplusia ni,
mating disruption, 736
Noctuidae, 736
pheromone, 736
Trichoplusia ni nucleopolyhedrovirus,
cost of resistance, 286
cross-resistance, 286
TnGV, 286
TnSNPV, 286
Trifolium repens,
carbon dioxide enrichment, 421
Frankliniella occidentalis, 421
Western flower thrips, 421
white clover, 421
tritrophic interaction, 180, 970, 1219
Acyrthosiphon pisum, 1219
Cotesia marginiventris, 970
development, 180
diet, 180
foraging, 1219
fungal infection, 970
Glyptapanteles militaris, 180
larval parasitoid, 180
leaf morphology, 1219
Pisum sativum, 1219
plant volatiles, 970
Pseudaletia unipuncta, 180
Spodoptera exigua, 970
tropical dry forest,
ants, 542
bioindicator, 542
Colombia, 542
forest fragments, 542
Wasmannia auropunctata, 542
tropical rice,
agrobiodiversity, 929
optimal sampling, 929
quadrat size, 929
Wiegert's method, 929
Tsuga canadensis,
Adelges tsugae, 523
hemlock woolly adelgid, 523
insect coldhardiness, 523
Tsuga caroliniana, 523
Tsuga caroliniana,
Adelges tsugae, 523
hemlock woolly adelgid, 523
insect coldhardiness, 523
Tsuga canadensis, 523
turfgrass,
biological control, 907
Geocoris spp., 907
host plant resistance, 907
predators, 907
two-spotted spider mite,
gas-exchange, 433
moisture stress, 433
photosynthesis, 433
soybean, 433
Tetranychus urticae Koch, 433

U

Unaspis euonymi,
Aphytis proclia, 602
Chilocorus kuwanae, 602
Cybocephalus sp.nr. *nipponicus*, 602
distribution, 602
Encarsia citrina, 602
unbalanced diets,
biological stoichiometry, 1
Choristoneura, 1
diet-induced thermogenesis, 1
insects, 1
spruce budworm, 1
Unitrap,
(Z,Z) 3,13-Octadecadien-1-yl Acetate, 208
lodgepole pine, 208
seed orchard, 208
wing trap, 208
urbanization,
Drosophila affinis, 347
Drosophila melanogaster, 347
Drosophila tripunctata, 347
species abundance, 347
species diversity, 347
Urolepis rufipes,
biological control, 717
development time, 717
fecundity, 717
intrinsic rate of natural increase, 717
Uruguay,
Anacassis, 689
Asteraceae, 689
Baccharidastrum, 689
Chrysomelidae, 689
oviposition, 689

V

variegation,
carbon-based plant defense, 463
Citrus mealybug, 463
herbivory, 463
nutrient mobility, 463
Solenostemon scutellarioides, 463
varroa mites,
exponential growth, 1305
growth rate, 1305
honey bees, 1305
vector beetle,
Bursaphelenchus xylophilus, 96
developmental response, 96
Monochamus alternatus, 96
nematode virulence, 96
pine wilt disease, 96
vegetation types,
beetles, 797
Drakensberg, 797
endemism, 797
niche, 797
vegetative diversity,
Anthonomus grandis, 39
boll weevil, 39
cotton, 39
natural enemies, 39
weeds, 39
Venturia canescens,
development, 1049
host instar, 1049
temperature, 1049
threshold, 1049
Vespa analis,
forced hibernation, 175
morphological caste differentiation, 175
multivariate analysis, 175
Xenos moutoni, 175
Vigna unguiculata,
azadirachtin A, 1283
heat degradation, 1283
high-performance liquid chromatography, 1283
postharvest, 1283
vineyard,
Anagrus, 1085
cover crops, 1085
grapes, 1085
virus transmission,
aphids, 1393
movement, 1393
potato, 1393
virus-vector relations,
Thripinema nicklewoodi, 853
tomato spotted wilt virus, 853
tospovirus, 853
western flower thrips, 853
Vitis,
distribution, 1187
ecology, 1187
Endopiza viteana, 1187
grape berry moth, 1187
volatile collection,
Anthonomus grandis, 31
boll weevil, 31
component ratio, 31
pheromone, 31
voracity,
ecogeographical Bergmann's rule, 939
genetic polymorphism, 939
Harmonia axyridis, 939
phenotypes, 939

W

Wasmannia auropunctata,
ants, 542
bioindicator, 542
Colombia, 542
forest fragments, 542
tropical dry forest, 542
weeds,
Anthonomus grandis, 39
boll weevil, 39
cotton, 39
natural enemies, 39
vegetative diversity, 39
western balsam bark beetle,
disruption, 742
mountain pine beetle, 742
nonhost, 742
spruce beetle, 742
Western flower thrips, 421, 853, 1056
carbon dioxide enrichment, 421
chrysanthemum, 1056
dispersal, 1056
Frankliniella occidentalis, 421
Frankliniella occidentalis, 1056
Thripinema nicklewoodi, 853
tomato spotted wilt virus, 853
tospovirus, 853
Trifolium repens, 421
virus-vector relations, 853
white clover, 421
white clover,
carbon dioxide enrichment, 421
Frankliniella occidentalis, 421
Trifolium repens, 421
Western flower thrips, 421
white mold,
beet armyworm, 220
larval development, 220
plant biochemistry, 220
plant-insect interaction, 220
Spodoptera exigua, 220
white pine,
canopy diversity, 1066
Cerambycidae, 1066
flight-interception traps, 1066
temperate forest, 1066
Wiegert's method,
agrobiodiversity, 929
optimal sampling, 929
quadrat size, 929
tropical rice, 929
wing trap,
(Z,Z) 3,13-Octadecadien-1-yl Acetate, 208
lodgepole pine, 208
seed orchard, 208
Unitrap, 208
wintering,
emergence, 711
mortality, 711
orchard pollination, 711
Osmia lignaria, 711
temperature, 711
within plant distribution,
Anthocoridae, 1035
biological control, 1035

pepper, 1035
Thripidae, 1035
Wolbachia,
fire ants, 1329
population structure, 1329
Solenopsis invicta, 1329
South America, 1329
wood chemistry,
Chamacyparis nootkatensis, 1234
Coptotermes formosanus, 1234
feeding deterrence, 1234
nootkatone, 1234

X

Xenos moutoni,
forced hibernation, 175
morphological caste differentiation, 175
multivariate analysis, 175
Vespa analis, 175

Y

yield,
Busseola fusca, 51
Cameroon, 51
egg parasitism, 51
Telenomus spp., 51

Z

(Z)-11-hexadecenal,
(Z)-9-tetradecenal, 17
biological control, 17
field bindweed, 17
sex pheromone, 17
(Z)-9-tetradecenal,
(Z)-11-hexadecenal, 17
biological control, 17
field bindweed, 17
sex pheromone, 17
(Z,Z) 3,13-Octadecadien-1-yl Acetate,
lodgepole pine, 208
seed orchard, 208
Unitrap, 208
wing trap, 208
Zea mays,
Bactrocera cucurbitae, 141
Bactrocera dorsalis, 141
cucurbits, 141
natural food sources, 141
pollen, 141
zinc,
boron, 641
herbivory, 641
iron, 641
plant nutrition, 641
zwittermicin A,
Bacillus thuringiensis, 387
gypsy moth, 387
host plant effects, 387
Lymantria dispar, 387
synergism, 387